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ABSTRACT

Over 200 professionals from schools in Minnesota participated in a computer simulated investigation of psychoeducational assessment and decision making for handicapped children. Demographic data were collected from each subject; estimates of the incidence of various handicapping conditions and knowledge of assessment was evaluated by a pretest. Each S read referral information about a child (one of 16 cases varying in terms of sex, socioeconomic status, physical attractiveness, and problem), and then accessed assessment information from seven domains (scores, qualitative information about performance, and/or technical information about the device). Eligibility, classification, prognostic, and placement decisions then were made for the child. Each S also indicated the extent to which various factors influenced decisions made, and answered questions about the efficacy of the computer simulation approach to the study for each research question; analyses of the findings as a function of referral information, professional role, and assessment knowledge are presented. Appended is the technical supplement which includes information on the diagnostic simulation program, examples of the student's scores on assessment devices, figures and tables presenting representative data of the school psychologists, and the actual case folder information presented to Ss. (Author/DB)

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Research Report No. 32

PSYCHOEDUCATIONAL ASSESSMENT AND DECISION MAKING: A COMPUTER-SIMULATED INVESTIGATION

James E. Ysseldyke, Bob Algozzine, Richard R. Regan, Margaret Potter, Linda Richey, and Martha Thurlow

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I. Adequacy of Norm-Referenced Data for Prediction of Success

II. Computer Simulation Research on the Assessment/Decision-making/Intervention Process

III. Comparative Research on Children Labeled LD and Children Failing Academically but not Labeled LD

IV. Surveys on In-the-Field Assessment, Decision Making, and Intervention

V. Ethological Research on Placement Team Decision Making

VI. Bias Following Assessment

VII. Reliability and Validity of Formative Evaluation Procedures

VIII. Data-Utilization Systems in Instructional Programming

Additional information on these research areas may be obtained by writing to the Editor at the Institute.

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July, 1980

The human understanding when it has adopted an opinion, either as being the received opinion or as being agreeable to itself, draws all things else to support and agree with it. And though there be a greater number and weight of instances to be found on the other side, yet these it either neglects and despises, or else by some distinction sets aside, and rejects; in order that by this great and pernicious predetermination the authority of its former conclusions may remain inviolate (Bacon, 1962).

Abstract

Over 200 professionals from schools in Minnesota participated in a computer-simulated investigation of psychoeducational assessment and decision making. Demographic data were collected from each subject; estimates of the incidence of various handicapping conditions and knowledge of assessment was evaluated by a pretest. Each subject read referral information about a child (one of 16 cases varying in terms of sex, SES, physical attractiveness, and problem), and then accessed assessment information from seven domains (scores, qualitative information about performance, and/or technical information about the device). Eligibility, classification, prognostic, and placement decisions then were made for the child. Each subject also indicated the extent to which various factors influenced decisions made, and answered questions about the efficacy of the computer-simulation approach to the study of psychoeducational decision making. Results are reported in detail for each research question; analyses of the findings as a function of referral information, professional role, and assessment knowledge are presented.

Table of Contents

	Page
Chapter 1: Introduction	1
Background for the Study	1
Rationale	3
Research Questions	4
Major Findings	7
Chapter 2: Development of the Computer Simulation Program	12
Background	12
Simulation Defined	12
Advantages of Simulation	13
Categories of Simulation Procedures	14
Pencil and paper simulations	14
Patient simulations	14
Audiovisual simulations	15
Mechanical simulators	15
Computer simulations	15
Computer Diagnostic Simulation Programs	15
Diagnostic Simulation Perspective	16
Method	19
Demographic Information and Pre-Test	19
Referral Information	19
Assessment Domains and Information Available	20
Outcome Questions	22
Summary	23
Chapter 3: Methodology	24
Subjects	24
Procedure	25
Dependent Data	25
Independent Variables	26
Data Analyses	26
Summary	27
Chapter 4: Test Usage in Computer-Simulated Decision Making	28
Procedure	28
Domains and Information Available	28
Overall Test Usage	29
Technical Adequacy of Tests Used	30
Use of Tests as a Function of Referral Information	31
Use of Tests as a Function of Professional Role	32
Use of Tests as a Function of Knowledge of Assessment	32
Summary	33

Table of Contents (cont.)

Chapter 5: Use of Technical Information in Simulated Decision Making 35
Procedure 35
Overall Use of Technical Information 36
Requests for Technical Information as a Function of Referral Information 37
Use of Technical Information as a Function of Professional Role. 37
Use of Technical Information as a Function of Assessment Knowledge 38
Summary. 38

Chapter 6: Use of Qualitative Information in Simulated Decision Making 40
Procedure. 40
Overall Use of Qualitative Information 40
Requests for Qualitative Information as a Function of Referral Information. 41
Use of Qualitative Information as a Function of Professional Role. 42
Use of Qualitative Information as a Function of Assessment Knowledge 42
Summary. 43

Chapter 7: Eligibility Decisions 44
Procedure. 45
Overall Eligibility Decisions. 46
Eligibility as a Function of Referral Information. . . 46
Eligible. 46
Ineligible. 47
Eligibility as a Function of Professional Role 47
Eligibility as a Function of Knowledge of Assessment 48
Summary. 48

Chapter 8: Classification Decisions. 50
Procedure. 51
Overall Classification Decisions 52
Classification as a Function of Referral Information. 53
Classification as a Function of Professional Role. . . 54
Classification as a Function of Assessment Knowledge. 56
Summary. 57

Chapter 9: Prognostic Decisions. 60
Procedure. 61
Overall Prognostic Decisions 62

Table of Contents (cont.)

Prognoses as a Function of Referral Information 63
Prognoses as a Function of Professional Role. 63
Prognoses as a Function of Assessment Knowledge 64
Summary 65

Chapter 10: Placement Decisions 66
Procedure 66
Overall Placement Decisions 66
Placement as a Function of Referral Information 67
Placement as a Function of Classification 68
Placement as a Function of Professional Role. 69
Placement as a Function of Knowledge of Assessment. . . 70
Summary 70

Chapter 11: Factors Perceived as Influencing Decisions. . . 72
Procedure 73
Overall Perceived Influence of Factors. 74
Perceived Influence of Factors as a Function of Referral Information. 75
Perceived Influence of Factors as a Function of Professional Role 77
Perceived Influence of Factors as a Function of Assessment Knowledge. 77
Summary 78

Chapter 12: Expectations for Various Handicapping Conditions 81
Procedure 84
Estimates of Handicapping Conditions in Groups of Children 85
Minority Children. 85
Low SES Children 85
High SES Children 86
Boys 86
Girls. 86
Estimates for Various Handicapping Conditions 87
Academic difficulties. 87
Behavior problems. 87
Emotional disturbance. 88
Learning disabilities. 88
Mental retardation 88
Physical handicaps 89
Sensory impairments 89
Speech and language difficulties 89
Estimates as a Function of Professional Role. 89
Estimates as a Function of Knowledge of Assessment. . . 90
Summary 90

Table of Contents (cont.)

Chapter 13: Efficacy of Simulation 93
Procedure. 94
Simulation vs. Real-life 95
Simulation Time. 96
Useful Information 96
Needed Information 97
Summary. 97

Chapter 14: Summary. 99
Method 102
Results. 103
Frequency of Test Usage 103
Technical Adequacy of the Tests Used. 104
Use of Technical Manuals. 105
Use of Qualitative Information. 105
Eligibility Decisions 105
Classification Decisions. 106
Placement Decisions 107
Factors Influencing Decisions 108
Expectations. 108
Efficacy. 108

References. 110

Footnotes 120

Tables 121

Figures 177

Chapter 1

Introduction

Research efforts of the Institute for Research on Learning Disabilities at the University of Minnesota focus on the complex set of theoretical, conceptual, practical, and empirical issues in the identification and assessment of the heterogeneous group of students labeled learning disabled. This research report describes the results of a computer-simulated investigation of the assessment and decision-making process. Major research objectives addressed by this study included the following:

- To identify the extent to which differences in naturally-occurring pupil characteristics cause decision makers to select different assessment devices and strategies.
- To identify the extent to which differences in naturally-occurring pupil characteristics affect decisions reached about children.
- To ascertain the extent to which those who assess and make decisions select technically adequate devices when options are available.
- To ascertain the extent to which knowledge regarding assessment affects decision making.

Background for the Study

School personnel regularly must decide who, among those students experiencing academic and behavioral difficulties, should be declared eligible for and receive special education services. Considerable time

and effort go into the collection of data for decision making and into the actual deliberations that lead to decisions. Yet, we know very little about the decision-making process, about how tests are used to make decisions, and about the extent to which different kinds of data are perceived as influencing the decisions that are made. In short, though professionals engage in a variety of assessment activities, very little empirical evidence guides those actions.

Professionals charged with the task of making psychoeducational decisions about students routinely administer or use the results of pupil performance on standardized tests during the decision-making process. Test data are collected to facilitate the making of screening, eligibility/classification/identification/placement, intervention, and evaluation decisions (Salvia & Ysseldyke, 1978). Apparently, test data are collected because someone believes they are important to and useful in decision making. While a number of investigators have reported the frequency with which various kinds of tests are used in practice (Levine, 1974; Santamaria, 1975; Silverstein, 1963; Thurlow & Ysseldyke, 1979), there are no investigations reporting specifically the kinds of tests used by different practitioners with the same referred students, and no data on the extent to which decision makers perceive different kinds of test information as influencing the decisions they make.

Considerable data do exist demonstrating that both professional-student interpersonal interactions and the assessment process are differentially affected by naturally-occurring pupil characteristics (e.g., race, sex, socioeconomic status, physical attractiveness, etc.). For example, it has been demonstrated that teachers interact differently

with black and white students (Coates, 1972; Rubovits & Maehr, 1973), and with girls and boys (Meyer & Thompson, 1956). It has also been reported that pupil sex differentially affects the kinds of academic and social difficulties decision makers expect students to demonstrate (Algozzine & Ysseldyke, 1979; Schlosser & Algozzine, 1979). Jackson and Lahaderne (1967) showed the pupil socioeconomic status differentially affects teacher-pupil interactions, while several investigators (Algozzine, 1975; Berscheid & Walster, 1974; Ross & Salvia, 1975) demonstrated that a pupil's physical attractiveness differentially affects both interactions and diagnostic outcomes.

In the current investigation, we examined both the issues of test use and the extent to which the decision-making process and outcomes of that process were biased by referral information about a student. At the same time, we gathered information on the extent to which decision makers use technically adequate tests, use test manuals, and go beyond test scores to evaluate how youngsters earn those scores.

Rationale

The psychoeducational assessment and decision-making process can be, and in fact has been, investigated using many different methodologies. In many previous studies, decision makers have been asked about aspects of the process. Research reported in this area of investigation includes survey or questionnaire research (Fenton, Yoshida, Maxwell, & Kaufman, 1979; Hoff, Fenton, Yoshida, & Kaufman, 1978; Poland, Ysseldyke, Thurlow, & Mirkin, 1979; Thurlow & Ysseldyke, 1979; Yoshida, Fenton, Maxwell, & Kaufman, 1977, 1978). In other instances, placement teams have been

observed (Applied Management Sciences, 1979; Ysseldyke, 1978) and/or videotaped (Ysseldyke, 1978).

Recent investigations of decision making in medical and educational settings have used computer simulation to study specific aspects of the process (Elstein, Shulman, & Sprafka, 1978), and simulation is being used increasingly to study psychoeducational decision making (Gil, Wagner, & Vinsonhaler, 1979; Patriarca, Van Roekel, & Lezotte, 1979). Computer simulation affords the investigator the opportunity to study clinical decision making without interfering in the naturalistic process and risking potential harm to students. Since this study was conducted using a computer simulation program, the efficacy of that process was also evaluated.

Research Questions

The following major research questions were addressed in this simulation study of decision making.

A. Test Usage

- What specific domains (e.g., intelligence, achievement, personality) do decision makers gather data in?
- What specific assessment devices (tests or other data collection procedures) do they select?
- How often do decision makers use technically adequate tests (with regard to norms, reliability, and validity)?
- To what extent do naturally-occurring pupil characteristics bias test selection?
- To what extent do representatives of different roles (e.g., special education teachers, school psychologists) select different tests?

- To what extent is test selection a function of one's knowledge about assessment?

B. Use of Technical Manuals

- How often (i.e., what percentage of the time) do decision makers refer to technical manuals when using specific tests?
- To what extent do naturally-occurring pupil characteristics bias manual usage?
- To what extent is manual usage a function of professional role?
- To what extent is manual usage a function of one's knowledge about assessment?

C. Use of Qualitative Information

- To what extent do decision makers go beyond test scores to look at ways in which those scores were earned?
- To what extent do naturally-occurring pupil characteristics bias the use of qualitative information?
- To what extent is the use of qualitative information different as a function of professional role?
- To what extent is the use of qualitative information a function of one's knowledge about assessment?

D. Eligibility Decisions

- Given data indicative of normal or average test performance by a referred student, to what extent do decision makers declare the student eligible for special education services?
- To what extent are eligibility decisions biased by the referred student's sex, socioeconomic status, physical appearance, and presenting problem?

- To what extent is differential eligibility decision making a function of professional role?
- To what extent is differential eligibility decision making a function of knowledge about assessment?

E. Classification Decisions

- Given data indicative of average pupil performance, to what extent do decision makers classify students as learning disabled, mentally retarded, and emotionally disturbed?
- To what extent are classification decisions biased by naturally-occurring pupil characteristics?
- To what extent do representatives of different roles classify differently given the same assessment data?
- To what extent are classification decisions a function of knowledge about assessment?

F. Prognostic Decisions

- Given data indicative of average performance on tests, to what extent do decision makers predict that students will evidence difficulties in reading, mathematics, and speech?
- To what extent are prognostic decisions biased by naturally-occurring pupil characteristics?
- To what extent is prognostic decision making a function of professional role?
- To what extent is prognostic decision making a function of knowledge about assessment?

G. Placement Decisions

- What is the variability in the kinds of placements recommended for students with comparable test scores?

- To what extent are placement recommendations a function of pupil sex, socioeconomic status, appearance, and nature of difficulty?
- To what extent do representatives of different roles make different placement recommendations for the same student?
- To what extent does knowledge about assessment affect the making of placement decisions?

H. Factors Influencing Decisions

- To what extent do decision makers believe they are influenced by test scores and naturally-occurring characteristics in the decisions they make?

I. Expectations

- To what extent do educational personnel expect specific kinds of students (e.g., black students, physically unattractive students) to be represented in specific categorical groups?

J. Efficacy of Simulation

- To what extent is computer-simulated decision making perceived as representative of "real life" decision making?

Major Findings

The following major findings were obtained for each of the research questions. Details are reported in later chapters.

A. Test Usage

- The most frequently selected domains were achievement and intelligence.
- The most frequently selected tests were the WISC-R and the Bender.

- Twenty-four percent of the available tests were considered to be technically adequate with respect to norms and validity, and 41 percent with respect to reliability. Professionals selected adequate tests earlier in the decision-making process, but chose inadequate devices in subsequent selections.
- Achievement tests were most frequently used for academic referrals; behavioral measures were most frequently used for behavior referrals. Other naturally-occurring pupil characteristics did not influence test usage.
- Psychologists tended to use frequency counts, event recordings, and projective tests more often than other professionals.
- Educators' knowledge about assessment did affect their assessment and decision-making practices.

B. Use of Technical Manuals

- General use of technical manuals was low.
- Requests for technical information were less frequent when students were referred for academic problems than when they were referred for behavior problems.
- Regular educators made the most frequent use of test manuals, while school psychologists and school administrators were the least likely professionals to access test manuals.
- Those who earned high scores on the pretest made very few requests for technical information.

C. Use of Qualitative Information

- Requests for qualitative information paralleled the referral

statement (e.g., qualitative information was requested on academic measures when the student was referred for academic problems).

- Number of requests for qualitative information was similar among all groups of professionals and levels of pretest knowledge. In addition, requests for qualitative information did not differ as a function of naturally-occurring pupil characteristics.

D. Eligibility Decisions

- Fifty-one percent of the decision makers declared the normal child eligible for special education services.
- No pattern of naturally-occurring pupil characteristics was evident in the participants' identifications of pupils as eligible for special education services.
- Administrators were least likely to declare eligibility. Regular educators were most likely to declare the normal child eligible for service. Regular educators declared the student eligible twice as often as administrators.
- Knowledge of assessment did not influence decision makers' eligibility decisions.

E. Classification Decisions

- Subjects rated the normal child as very likely to be LD, likely to be ED, and very unlikely to be MR.
- In all but three conditions, when the child was classified, the most commonly used classification was LD. Three exceptions were conditions 4, 11, and 16 (all of which had a behavioral referral statement). In these conditions the

child was classified as ED as often or more often than LD.

- Some variability was evident in the ways in which groups of professionals classified students.
- Types of classification decisions made did not vary as a function of knowledge about assessment.

F. Prognostic Decisions

- Almost two-thirds of the participants felt that the child would have difficulty in reading; less than half felt difficulties might occur in math.
- Naturally-occurring pupil characteristics did not influence prognostic decisions.
- Professional role and knowledge of assessment did not influence prognostic decisions.

G. Placement Decisions

- Regular class with resource teacher consultation and part-time resource room were the most frequently recommended educational settings.
- Naturally-occurring characteristics, professional role, and knowledge about assessment did not influence the placement decisions made.

H. Factors Influencing Decisions

- Scores on achievement tests and intelligence measures and the disparity between the two were viewed as most influential.
- Scores on personality tests and behavioral recording data were reported to have greater influence for students referred for behavior problems than for students referred for academic problems.

- Reason for referral was perceived as having more influence than the naturally-occurring factors.

I. Expectations

- Professionals' estimates for various handicaps were far in excess of actual incidence figures.
- Minority and low SES children were expected to have the highest percentage of handicap.
- School psychologists' estimates were more accurate than other professionals.
- Girls and high SES children were expected to have the fewest handicaps.

J. Efficacy of Simulation

- Eighty-eight percent of the participants said the simulation approximated "real life" decision making.

Chapter 2

Development of the Computer Simulation Program[1]

Background

Simulation activities have been used extensively in fields such as medicine, corporate management, science, and business to foster more effective decision making, to advance understanding of the current functioning of the system under investigation, to analyze the interrelationships of the subunits within a given system, to test various decision-making rules, and to provide an objective method of hypothesis testing and data collection in fields that are vulnerable to subjective decision-making processes and measurement issues (Abt, 1970; Goodman, 1973; Hughes & Traill, 1975; Taylor & Walford, 1974; Utsey, Wallen, & Beldin, 1966).

Simulation Defined

A "simulation, by definition, is pretense or imitation of something else" (Newsom, Schultz, & Friedman, 1978, p. 424); it is "a means for letting learners experience things that otherwise might remain beyond their imagination, a means to practice skills safely and without embarrassment, and perhaps even discover insights into problems" (Twelker, 1968, p. 11). Another definition suggests that simulation is a "selected representation of a real situation or a reproduction of a social or physical environment" (Rogers, 1972, p. 13). Generally, then, simulation involves an individual in a representative form of a real-life experience. The experience is usually one in which decision-making strategies are required and deemed important; it is one in which natural constraints often limit the "playing out" of the simulated activity in real life. For example, as Lukas, Berner,

and Kanakis (1977) point out, simulators are particularly useful in instances when occurrences of clinical conditions are rare enough that an individual may not experience them in normal training.

Advantages of Simulation

Specific advantages of simulation have been delimited; for example, Hoban (1978) listed low student and patient risks, relevancy, and instructor control as benefits to be gained through simulations in health education. Cruickshank (1972) provided a list of seven advantages for simulated educational experiences; they included:

1. Can be used to collect data about how people behave under certain life-like situations.
2. Can be used to determine whether or not participants are able to apply principles, laws, and facts they have learned to life-like situations.
3. Can be used to condition participants to behave in a certain way.
4. Can be used to provide experiences not normally available in training programs -- e.g., engaging in and solving real-world problems.
5. Permit participants to look at only selected, simplified, and controlled elements of reality, rather than trying to look at and understand all of it.
6. Permit participants to engage in potentially dangerous and/or threatening situations without actual danger or threat.
7. Found to be more involving intellectually and emotionally than most forms of instruction (p. 18).

In spite of the strong support offered for simulation, it is, of course, not the real-life experience nor should it be expected to mirror it. Dutton and Briggs (1971) feel that "researchers must not try to make the simulation look exactly like the real thing because if simulation is as complicated as the real process it represents, it will be no more comprehensible than the real process" (p. 103). Thus, the purpose of any simulation should be to duplicate only the essential characteristics of the system under study thereby providing an experience unencumbered by unnecessary, irrelevant dimensions. Toward this general goal, several forms of simulation have evolved.

Categories of Simulation Procedures

Hoban (1978) classified simulations used in health professions education according to the extent to which sophisticated "hardware" was considered an integral part of the experience. He included experiences in which actors, audio- or video-tape, films, written presentations, slides, and still pictures were the relevant media as "low hardware" simulations and those in which computers and complex electronic devices were used as "high hardware" varieties.

Pencil and paper simulations. For training and other purposes, individuals are often presented with written information and asked to respond to it either in written narrative or multiple-choice form. Such "case study" simulations often provide the information in a sequential fashion similar to that which occurs in real life.

Patient simulations. Another form of information presentation is that which utilizes real people as the "case." It is common in this type of experience for an actor or confederate to behave in a predetermined

manner so that decision making can be observed, evaluated, and trained.

Audiovisual simulations. Case information or simulation tasks may also be presented via video- or audio-tape presentations. Hoban (1978) describes one such process as follows:

> Patients are trained to present the interviewer with some verbal and nonverbal information on videotape. The taped interview is then interrupted and the viewer is asked to choose among a number of possible actions the interviewer could take. Each possible action is shown on tape. The viewer selects an action to be taken. Then the patient responds to each of the interviewer's actions as shown. A narrator's voice comments on the appropriateness of the action. (p. 21)

Mechanical simulators. A variety of lifelike models of various body parts and/or body functions have been developed and used in simulations. Some are designed as instructional "dummies" and others mimic or present various clinical conditions for clinician reactions.

Computer simulations. Information about a case may be presented by or accessed from a computer program. Usually, the participant plays the role of diagnostician, counselor, physician, or other service personnel and responds to or requests information about the client.

Computer Diagnostic Simulation Programs

Programs which simulate the clinical diagnostic procedure have become an important part of training and educational programs in medicine and psychology. For example, the Computer-Aided Simulations of the Clinical Encounter (CASE) described by Harless, Drennon, Marxer,

Root, and Miller (1971) provides experience in medical decision making for students. Information of a historical nature as well as physical exam and laboratory data are provided via the computer and CASE program. Students play the role of attending physicians and interact with the computer information to collect diagnostic data and prescribe treatments.

The CLIENT 1 program (Hummel, Lichtenberg, & Shaffer, 1975) was designed "to represent a plausible model of an individual within an initial counseling interview" (p. 165). The current "client" is assumed to have a finite number of topics which he will discuss; the counselor interacts with the client via a cathode ray tube and computer terminal keyboard. A system of messages constructed by the counselor's selection of predetermined codes structures the interview and enables considerable flexibility in responses (e.g., more than 30,000 different counselor statements may be constructed). Hummel et al. report that the program "is valuable as a means of training and evaluation in counselor education and in studying counselor cognitive processes" (p. 164).

Other examples of computer diagnostic simulation programs are readily available. A program described by Colby, Weber, and Hilf (1971) simulates a psychiatric interview with a paranoid patient. The University of Wisconsin Medical School has used a computer-based simulation of the patient-physician encounter in training third year students (Friedman, Korst, Schultz, Beatty, & Entine, 1978). Schoolman and Bernstein (1978) described several programs in which computers were used in "diagnosis, prognosis, and therapy."

Diagnostic Simulation Perspective

With the previous discussion as background, the value of using

computer simulations in the study of psychoeducational diagnoses and decision-making processes should be evident. The process of diagnostic assessment and decision making is ongoing and dynamic; it includes program and placement decisions that are made on the basis of a variety of client characteristics represented as test scores, protocols, observational ratings, reports from school and other professional personnel, parent information, medical reports and other relevant as well as irrelevant case information. Prior to the specific type of decision (i.e., screening or identification, classification or placement, planning of instructional interventions, evaluation of individual pupils or programs) to be made, decisions must be made about data collection procedures, functions or modalities to be assessed, instruments or techniques to be employed, and followup procedures to be used. The number and variety of components that must be addressed in the educational milieu regarding the psychoeducational decision-making process suggest that an interactive relationship among subunits within the system exists; in this regard, the process seems highly adaptable to computer simulation.

The Institute for Research on Teaching at Michigan State University has engaged in a series of investigations designed to evaluate clinical problem-solving behaviors of teachers engaging in reading diagnoses (Gil, Vinsonhaler, & Wagner, 1979; Gil, Wagner, & Vinsonhaler, 1979; Vinsonhaler, 1979). That research was completed with three different kinds of studies:

1. Observational studies, in which reading clinicians and classroom teachers are observed as they interact with simulated cases of children with reading difficulties.

2. Training studies, in which the instruction in reading diagnosis and remediation classes is explicitly guided by the Inquiry Theory (see Elstein, Shulman, & Sprafka, 1978). This instruction includes the students' interaction with simulated cases and real children with reading difficulties, with computer-based decision aids to guide these interactions; and
3. Computer simulation studies, in which simulated clinicians are created to reflect both ideal and typical approaches of reading clinicians to diagnosis and remediation (Gil, Wagner, & Vinsonhaler, 1979, pp. 1-2).

The utility of a computer simulation procedure for psychoeducational decision making seems to be established. For this research, a computer program was developed to simulate the decision-making process that diagnostic personnel in the schools go through in identifying and classifying children. The program made it possible for participants to select and obtain test information from among seven different domains for the purpose of evaluating an hypothetical client (one of sixteen possible cases). In addition to quantitative test scores, qualitative information about the child's performance as well as technical information about the test were available. A flow chart illustrating the steps in the program is presented in Figure 2-1.

Insert Figure 2-1 about here

Method

Demographic Information and Pretest

The diagnostic simulation program was initiated with collection of demographic data about the subject. This procedure was followed to help familiarize participants with the use of the Teleray 1060 Cathode ray tube and keyboard. Information regarding the subject's sex, age, current educational position, years of experience and background training was collected via a series of fill-in type questions. During this phase of data collection, a 30-item pre-test was also administered. Twenty-five of the items were designed to measure knowledge about psychoeducational assessment; five others measured stereotypical bias-type information regarding naturally-occurring student characteristics and placement in special education classes. The questions for the pretest appear in Appendix A-1.[2]

Referral Information

To evaluate the extent to which selected naturally-occurring student characteristics were influential in educational decision making, a series of case folders was prepared. In each of the sixteen folders, the child's sex, socioeconomic status (SES), referral statement of the problem, and appearance were varied. The folders were presented after the demographic data had been collected.

In the folder, the child's name was listed as either Phyllis or William and academic or behavior problems were listed as the reason for referral. To manipulate socioeconomic status, the child's parents were said to be a bank vice president and real estate agent (i.e., high SES) or bank janitor and grocery store check-out clerk (i.e., low SES). In addition to this written background information, a picture was attached

to each case folder. A Q-Sort procedure was used to identify two attractive and two unattractive children of each sex. In one of the 16 referral conditions, then, the participant was presented the case folder for an unattractive male with behavior problems in school, whose father was a bank vice president and whose mother was a real estate agent. In another, an attractive girl from a low SES family was presented with academic problems, and so on. The actual referral statements are listed in Appendix A-2.

After reviewing the case folder information, the participants indicated readiness to proceed by typing the street address of the child. This step was included as a means of recording the case folder type (e.g., 1-16) for later analysis; the street address for all children was Main Street, but the house number varied to indicate case type. This procedure was viewed as the least biasing means of collecting necessary data regarding the experimental manipulation.

Assessment Domains and Information Available

When the participant entered the case identifying number, the following statements were supplied:

"Additional information is available for this child.
Please indicate which type of information you would
like to have first.

1. Intelligence Test Scores
2. Achievement Test Scores
3. Perceptual-Motor Test Scores
4. Behavioral Recordings
5. Personality Test Scores

6. Adaptive Behavior Scale Scores

7. Language Test Scores

Type the number of the type information you want _____."

After the domain indicating number was entered, a list of actual devices available within the domain was supplied. For example, if the subject indicated that he/she wanted intelligence test scores, then the following list was presented and the subject typed the number of the device selected:

17. Stanford-Binet Intelligence Scale

18. Wechsler Intelligence Scale for Children-Revised

19. Slosson Intelligence Test

20. McCarthy Scales of Children's Abilities

21. Full-Range Picture Vocabulary Test

22. Quick Test

23. Peabody Picture Vocabulary Test

24. Goodenough-Harris Drawing Test

25. Henman-Nelson Tests of Mental Ability

26. Kuhlmann-Anderson Intelligence Tests

27. Otis-Lennon Mental Ability Test

28. Primary Mental Abilities Test

A complete listing of the devices for which information was available is presented in Appendix A-3.

In addition to quantitative test scores, additional information was available for each of the 49 devices. After selecting each unit of quantitative information, subjects were queried by several computer presented statements; a positive response to the first resulted in the presentation of technical information for the device selected as well as the test scores for

the child. Data regarding the general characteristics of the test as well as psychometric qualities (i.e., norms, reliabilities, etc.) listed in the most current manual were available. Similarly, participants were provided access to "qualitative information" about the child's performance on the device if they indicated a desire to receive that information. Examples of the "technical manuals" and qualitative information for selected devices are presented in Appendix A-4.

All performance data were within the average range for a pupil of the referral age. Tests included were among those that Thurlow and Ysseldyke (1979) found to be frequently used in making decisions about learning disabled youngsters. Participants were allowed free selection of devices; the order as well as nature (i.e., with or without additional information) was recorded within the computer program. Selection of domains and specific tests was allowed to continue until the participant indicated a readiness to make a placement and classification decision (or until 25 minutes had elapsed).

Outcome Questions

A series of questions was presented after the subjects had reviewed the case information and collected performance data for the referred child. Decisions regarding eligibility for services, diagnosis, prognosis, classroom placement, and influence of various bits of information were requested. Each question was presented individually, and all responses were internally maintained by the program. Decision questions are presented in Appendix A-5.

Summary

A computer simulation program was developed for the purpose of studying the processes engaged in by diagnostic personnel in the schools when making psychoeducational decisions about children. Initially, the program collected demographic data on the participants and assessed their knowledge base in assessment. Bogus referral information for one of 16 "cases" was then provided and subjects were instructed that they were to make classification and placement decisions for the child. They were told that scores and other information were available to them on a variety of tests from among seven domains. Participants indicated domains in which they wanted information and then selected specific tests for which they wanted performance scores, technical information, and/or qualitative performance data. All information was stored in three separate data retrieval archives and was available to all participants throughout the diagnostic simulation. All performance data were within the average range for a pupil of the referral age. Participants were allowed to continue selecting domains and specific information until they indicated they were ready to make their decisions; a series of outcome questions was then presented. It was assumed that this simulation procedure duplicated the essential characteristics of psychoeducational assessment practices being evaluated.

Chapter 3

Methodology

To study the process in which diagnostic decision makers engage, a computer simulation program was developed and implemented; a detailed description of that aspect of the research was presented in Chapter 2. This chapter contains a description of the subjects who participated in the computer simulation study, additional procedural information, and a summary of the data analyses which were completed for the various sets of information collected.

Subjects

Two hundred and twenty-four professionals from public and private schools in Minnesota participated in the computer-simulated decision making. Portions of the responses of 65 of these subjects were lost; therefore, in many analyses, the number of subjects was 159. All subjects were paid volunteers who had previously served on at least two placement team meetings in which classification decisions about a child were made. Disciplines represented within the sample of 159 included regular education teachers (N = 52), special education teachers (N = 50), administrators (N = 17), school psychologists (N = 25), and other support personnel (e.g., school nurses, social workers, etc.) (N = 15). Twenty-five percent (N = 40) of the sample was comprised of males. Numbers in the sample of 224, by role, were 58, 79, 31, 30, and 26, respectively. Most of the sample (i.e., 87%) worked in suburban settings; nine percent worked in urban districts, while four percent served rural districts. The educational background of the 159 subjects is presented in Table 3.1.

Insert Table 3.1 about here

Additional demographic characteristics are presented in Table 3.2; the subjects were well educated and seemed to have considerable in-field experience.

Insert Table 3.2 about here

Procedure

Each subject participated in the computer simulation program described earlier. A pretest in which knowledge of assessment was evaluated was administered prior to engaging the interactive program; this was done as a time-saving measure. The initial computer time was spent in the collection of demographic data (approximately 20 minutes per subject). Each participant was then given a brief introduction to the task at hand and provided with a referral folder in which selected naturally-occurring pupil characteristics (i.e., sex, SES, referral statement of problem, appearance) had been systematically varied. The subjects were then allowed to select assessment information for approximately 25 minutes or until they were ready to make their final decisions about the child; at that time, a series of outcome questions regarding eligibility, diagnosis, prognosis and other aspects of decision making were presented. The sequence of participation is presented in Appendix B-1.[2]

Dependent Data

As a result of each subject's participation, several kinds of data

were collected. With regard to the usage of each of the 49 devices, information was available regarding the number of times each was selected as well as the order in which selection occurred; similarly, the extent to which the technical manual and/or qualitative information were used for each device was tabulated. Within the outcome questions, information on the eligibility, diagnosis (e.g., ED, LD, or MR), prognosis in various areas (e.g., reading, spelling, etc.), placement alternatives and factors influencing decisions was collected. Subjects were also asked to indicate the extent to which the simulation program was similar to real-life decision making. Additionally, the pretest contained five items that requested information regarding the subjects' judgments about special classroom distributions.

Independent Variables

The primary factors that were experimentally manipulated were those present in the case folders. The extent to which these naturally-occurring characteristics influenced psychoeducational decision making was of primary interest within this research. However, differences among subjects grouped according to current professional position or knowledge of assessment (i.e., pretest score) were also considered important.

Data Analyses

The statistical presentation of the data varied according to the nature of the dependent scores and the questions being addressed. Frequency counts and other descriptive procedures were used when nominal or ordinal level data were obtained (e.g., number of times a device was selected or relative ranking of placement alternatives). Other descriptive indices (i.e., means, standard deviations) were used when interval

level data were available. In some cases, statistical tests of the "extent of differences" were performed; these were selected and performed based upon the nature of the data and question being addressed.

The level of significance for all tests between means was set at 0.05 and an additional criterion of at least a 0.5 unit difference was imposed; this value represented approximately a 10 percent change on the Likert Scales (i.e., 1-5 range) of interest and was used to differentiate statistical significance and practical importance for some analyses.

Summary

Trained school personnel participated in a 45-minute diagnostic simulation program in which various assessment information was utilized. The extent of usage of various devices as well as the use of technical manual and qualitative information was tabulated and available for analysis as were subjects' responses to the primary dependent measure.

Chapter 4

Test Usage in Computer-Simulated Decision Making

Educational personnel routinely use tests to gather information for the purpose of making psychoeducational decisions about students. Such decisions can have a significant effect on the student's life opportunities. When data are collected using tests, it is imperative that the tests used be technically adequate (Salvia & Ysseldyke, 1978; Ysseldyke, 1978, 1979); in fact, Ysseldyke (1979) contends that one of the most critical issues in current assessment efforts is the widespread use of technically inadequate tests in decision making. This portion of the research addressed the use of tests by various professionals in the decision-making process.

Procedure

After reading the referral case folder (see Chapter 2), participants in the simulated decision making were told that information on a variety of tests was grouped into seven domains. Participants were then allowed to select specific information from within each domain during the diagnostic session (maximum time of 25 minutes) in order to obtain information about the referred child. Each time a device was selected, an interval record was created. These data, available for 159 subjects, were later analyzed to evaluate various aspects of test usage.

Domains and Information Available

Assessment information from 49 devices was available; tests included

were those which Thurlow and Ysseldyke (1979) had found were most frequently used in making decisions about learning disabled youngsters (see Appendix A-3).[2] Seven domains of information were represented; for example, measures of daily classroom behavior as well as performance on tests of intelligence, achievement, perceptual-motor abilities, language, adaptive behavior, and personality were available. All scores reported were within the average range of performance for a pupil of the referral age; the most commonly used form of score representation was presented for each device. An example of the types of information presented to the participants is included in Appendix C-1.

Overall Test Usage

The name of each device and the number of times it was selected is presented in rank order in Table 4.1. The devices used by the most professionals were the Wechsler Intelligence Scale for Children - Revised and Bender Visual-Motor Gestalt Test. A variety of domains was represented within the top ten most frequently used devices; in fact, intelligence, perceptual-motor, achievement, and language tests were included as were behavior ratings and personality measures.

Insert Table 4.1 about here

Participants were allowed to select more than one device from any domain. The extent of use, based on number of selections made in each domain, is presented in Table 4.2; number of participants in each use category as well as relative percentages of the total sample (n = 159) are indicated. With regard to intelligence tests, 67 percent of the

participants made only one selection while 28 percent selected two or more; only nine people did not select tests from this domain. In contrast, 69 percent of the subjects did not select tests from those available within the adaptive behavior domain and 31 percent selected only one. These results indicate that of the seven domains of measurement devices which were made available, intelligence and achievement tests were selected more frequently, adaptive behavior devices were least utilized, and the remaining four domains were selected with similar frequency.

Insert Table 4.2 about here

Technical Adequacy of Tests Used

The psychometric characteristics of the assessment devices available for selection were quite varied; their technical adequacy along three dimensions (i.e., norms, reliability, validity) was of interest and was evaluated. First, tests that did not include necessary or appropriate psychometric information in their manuals were judged technically inadequate. Second, criteria specified in Salvia and Ysseldyke (1978), Ysseldyke (1978), and the APA Standards (1972) were used to judge the technical qualities of each of the other devices. The technical adequacy of each device relative to norms, reliability, and validity is presented in Table 4.3. Twenty-four percent (i.e., 12 of 49) of the devices were rated as having technically adequate norms and/or validity; 65 percent of the devices were rated as having inadequate norms, 59 percent as having inadequate reliability, and 67 percent as having inadequate validity.

Insert Table 4.3 about here

The extent to which technically adequate or inadequate devices were selected during the diagnostic simulation may be derived from Tables 4.4, 4.5, and 4.6; the total number of times the psychometrically similar devices were selected is also present. With respect to norms, 77 percent of the 159 devices which were selected as the first option (i.e., the device was selected first) were considered to be technically adequate; however, during the fourth selection, 74 percent of 144 devices selected were considered to be inadequate. In other words, professionals appeared to select adequate tests in the earlier selection, but as they continued to examine additional instruments, they chose devices which were inadequate. Results were similar with respect to reliability and validity, although differences were not so dramatic. For example, the highest percent of devices selected that were technically adequate with respect to reliability was 58 percent, while tests with adequate validity represented only 55 percent of the devices selected on the first run. The trend toward selection of more technically inadequate devices on subsequent runs remained consistent for all technical characteristics.

Insert Tables 4.4, 4.5, and 4.6 about here

Use of Tests as a Function of Referral Information

The number of tests within each domain used by professionals for each referral case is presented in Table 4.7; relative proportions for

each referral condition are also indicated. Test use was similar for most referral conditions but several exceptions are noteworthy. Most tests within the behavioral domain were administered for the child said to have behavior problems and most within the achievement domain for the child with academic problems.

Insert Table 4.7 about here

Use of Tests as a Function of Professional Role

Professionals from five different roles were represented in the sample; in fact, school psychologists, special education teachers, school administrators, regular class teachers, and other school personnel (e.g., school nurses, social workers, etc.) were included. The number of times each device was used by various groups of participants is presented in Table 4.8; total use and percentage of use within each category of professionals is also listed. In general, usage was similar across job defined groups; however, some exceptions were noted. Psychologists tended to use the Stanford-Binet (SBIS) much less than all other professionals; they also used frequency counts or event recordings (FCER) and projective tests (RIBT, SAM, or TAT) more often.

Insert Table 4.8 about here

Use of Tests as a Function of Knowledge of Assessment

As part of the diagnostic simulation program, the assessment knowledge of each participant was evaluated via a 25-item pretest. Psychometric content areas as well as general knowledge of tests and their

practical use were evaluated; the pretest is presented in Appendix A-1. The range of scores obtained by the simulation program participants was 0-24 (total possible score was 25); the complete score distribution is presented in Table 4.9. Four comparison groups were created based on the level of knowledge demonstrated on the pretest; individuals with scores of 6 to 10 were grouped together (i.e., very low knowledge group), individuals with scores of 11-15 were grouped together (i.e., low knowledge group), etc. The one person scoring below 6 was eliminated from further analyses. Use of tests by each assessment knowledge-based group was evaluated.

Insert Table 4.9 about here

The total number of times each test was used as well as the use by each comparison group is presented in Table 4.10; percentage of use within each group is indicated in parentheses. In general, use of tests was similar across the groups with differing levels of knowledge about assessment. In some cases, however, use was more evident in the very high knowledge group. For example, the Peterson-Quay Behavior Problem Checklist (PQBPC) was used at least 12 percent more and the TAT at least 28 percent more than the group with the next highest use.

Insert Table 4.10 about here

Summary

Professionals used a variety of tests when engaging in the diagnostic simulation program. Intelligence tests were used more frequently than

others by most professionals; the Wechsler Intelligence Scale for Children was selected most often. Behavioral rating devices were used more often with the child thought to be referred for behavioral problems. Some differences were evident in test use of different professionals and individuals with varying levels of assessment knowledge.

Chapter 5

Use of Technical Information in Simulated Decision Making

We believe it is logical to assume that educational professionals who use tests and test results to facilitate the decisions they make about students would attend to data on the technical adequacy of the tests they use. Most textbooks on assessment, most University assessment courses, and contemporary standards for educational and psychological tests stress the importance of doing so. Yet, we have observed elsewhere in this research report the fact that technically inadequate tests are often used in decision making.

One part of the larger study addressed the extent to which people refer to the information in test manuals during the decision-making process. Results of the investigation relevant to that research question are addressed in this chapter.

Procedure

At the same time that each participant selected assessment information from that available on 49 devices in seven domains (see Appendix A-3[2] for a listing of tests and domains), the participant was also allowed to review the technical characteristics of any test selected. This information included a brief description of the test as well as psychometric characteristics reported in the test manual; examples of this information are presented in Appendix A-4. Overall usage of this technical information as well as the extent of use by different professionals and individuals with different levels of knowledge regarding assessment were of interest.

Overall Use of Technical Information

The name of each device and the number of times technical information about it was selected is presented in rank order in Table 5.1; the overall use rank is also listed. The extent to which technical information was requested for a device and the overall use of that device were highly related (i.e., rank order correlation = 0.93); in other words, technical information was requested more for tests that were used more often. At least one of the 11 most highly ranked devices was from each of the seven domains available.

Insert Table 5.1 about here

Participants were allowed to select more than one device from any domain. The amount of technical information used based on number of selections made in each domain, is presented in Table 5.2 ; number of times technical information was selected as well as the relative percentages (of the total 159 subjects) of each are indicated. In general, use of technical information was low; the number of subjects requesting no information ranged from 50% (for behavior ratings) to 80% (for adaptive behavior ratings). While use was relatively evenly distributed across the domains of information available, requests for technical information were slightly higher for intelligence tests and behavior ratings; however, to some extent, these tests were used more often (see Chapter 4).

Insert Table 5.2 about here

Requests for Technical Information as a Function of Referral Information

The number of requests for technical information made by professionals for each referral condition is presented in Table 5.3; relative proportions for each referral condition are also indicated for each domain of information available. Requests were distributed similarly across types of referrals with some minor exceptions; however, technical information within the behavioral ratings domain was requested less for a child with academic problems at referral.

Insert Table 5.3 about here

Use of Technical Information as a Function of Professional Role

School personnel from five different roles were represented within the sample; school psychologists, special education teachers, school administrators, regular education teachers, and other professionals (e.g., social workers, school nurses, etc.) participated. The number of times technical information was requested for each device as well as the number of times the device was used by each group of professionals are presented in Table 5.4; the percentage of requests within each category is also indicated. When selection of the technical information occurred at a low rate (as in devices such as KMDAT or PPMS), the requests were somewhat similar across professional groups. When requests occurred at a higher rate (as in WISCR, PQBPC, OR PHCSCS), school psychologists and school administrators made fewer requests than other professionals.

Insert Table 5.4 about here

Use of Technical Information as a Function of Assessment Knowledge

Knowledge of various aspects of psychoeducational assessment was evaluated via a 25-item pretest (see Appendix A-1); the range of scores obtained by participating subjects was from 0-24 (total possible score was 25). Four comparison groups were created based on the level of knowledge demonstrated on the pretest; extent of use of technical information within and among these groups was evaluated. The total number of requests for technical information as well as requests within each knowledge-based group are presented in Table 5.5; the percentage of use within each group is also indicated. Those individuals with very high knowledge of assessment (i.e., pretest scores of 21-24) tended to make very few requests for technical information; among the other groups, request patterns were relatively similar for each device.

Insert Table 5.5 about here

Summary

Professionals participating in simulated diagnosis and decision making were allowed to review technical information in addition to any test scores they were interested in obtaining. Differences evidenced in the extent to which technical information was accessed by participants showed that information concerning technical adequacy was requested more for devices which were used most frequently; and that such requests were slightly higher for intelligence tests and behavior ratings. However, use of technical information regarding behavioral recordings was less for the child referred for academic problems. When requests for technical information occurred at a low rate, requests were similar

across professional groups (e.g., school psychologists, special educators); when such requests occurred at a high rate (e.g., WISC, PQBDC), school psychologists and school administrators made fewer requests than other professionals. Results also indicated that individuals with very high knowledge of assessment on the pretest tended to make fewer requests for technical information.

Chapter 6

Use of Qualitative Information in Simulated Decision Making

Professionals who are charged with the task of making psychoeducational decisions about students routinely administer and use the results of pupils' performances on standardized tests (Salvia & Ysseldyke, 1978). In addition to the results of formalized tests, qualitative information concerning the child's behaviors and characteristic response patterns during testing may yield helpful information concerning the child's abilities or disabilities. This portion of the larger simulated research effort examined the extent to which professionals use such qualitative information in the decision-making process.

Procedure

In addition to test scores and technical information about devices selected, participants in the computer simulation program were allowed to obtain qualitative information about the child's performance on each selected device (see Appendix A-4).[2] Each time the qualitative information was requested, an internal record was created; these data were available for 159 subjects and were analyzed to evaluate various aspects of qualitative score usage. Overall usage of this information as well as extent of use by various professionals and individuals with different levels of assessment knowledge was of interest.

Overall Use of Qualitative Information

The name of each device and the number of times qualitative information about it was selected is presented in rank order in Table 6.1; the overall rank is also listed. The extent to which qualitative information

was requested for a device and the overall use of the device were highly related (i.e., rank order correlation = 0.97); qualitative information was requested more for tests that were used more often. At least one of the ten most highly ranked tests was from each of the seven domains available.

Insert Table 6.1 about here

Participants were allowed to select more than one device from each domain. The extent of use of qualitative information, based on the number of requests made in each domain, is presented in Table 6.2; number of times qualitative information was selected as well as the relative percentages (of the total 159 subjects) of each are also indicated. In general, use of qualitative information was similar across intelligence, achievement, perceptual-motor, and behavioral recordings. Qualitative information was accessed less frequently for the remaining three domains.

Insert Table 6.2 about here

Requests for Qualitative Information as a Function of Referral Information

The number of requests for qualitative information made by professionals participating in the diagnostic decision-making simulation is presented in Table 6.3 according to the type of referral case reviewed. Relative proportions for each referral condition are also indicated for each domain of information available. Requests were distributed similarly across types of referral conditions with some minor exceptions; qualitative information

about behavioral ratings was requested more often for the child thought to have behavior problems.

Insert Table 6.3 about here

Use of Qualitative Information as a Function of Professional Role

School personnel from five different professional roles were represented within the sample; school psychologists, special education teachers, school administrators, regular education teachers, and other ancillary service personnel participated (see Chapter 3 for a more complete description of the subjects). The number of times these professionals requested qualitative information for each device as well as the total number of requests are indicated in Table 6.4; the percentage of requests within each category is also presented. Requests for qualitative information were relatively similar among different groups of professionals.

Insert Table 6.4 about here

Use of Qualitative Information as a Function of Assessment Knowledge

Knowledge of various aspects of psychoeducational assessment was evaluated via a 25-item pretest (see Appendix A-1); the range of scores obtained by professionals from various backgrounds was quite large (i.e., 0-24, maximum score = 25). Four comparison groups were created based on level of knowledge demonstrated on the pretest; extent of use of qualitative information within and among these groups was evaluated. The total number of requests for qualitative information as well as

requests within each knowledge-based group are presented in Table 6.5; percentage of use within each group is also indicated. Requests for qualitative information were relatively evenly distributed among individuals with different levels of assessment knowledge.

Insert Table 6.5 about here

Summary

Professional psychoeducational decision makers often comment that they do not make decisions on the basis of quantitative measures (e.g., test scores) alone. The extent to which qualitative information was used in simulated diagnostic decision making was evaluated in this investigation. Professionals tended to request qualitative assessment information with the quantitative scores although the use was at a less frequent level; for example, the child's performance scores on the WISC-R were requested 107 times while qualitative WISC-R information was requested 79 times; Bender performance was requested 74 times, and the qualitative information for it was selected 65 times. Few differences in use of qualitative information among various groups of professionals were indicated. Similarly, use did not systematically vary according to referral condition or level of assessment knowledge.

Chapter 7

Eligibility Decisions

The assessment of children takes many forms and is clearly an ever present activity in educational settings. Schools routinely collect vast quantities of data on the students they serve. When a student experiences academic and/or behavioral difficulties, educational personnel tend to expand their data collection activities for the pupil. As data collection procedures are expanded, it is assumed that the data collected will be useful in making psychoeducational decisions. To the extent that assessment data and/or student characteristics are irrelevant to the decision to be made, the decision-making process is adversely affected (Slovic, Kunreuther, & White, 1974).

In general, teachers' and other professionals' attitudes toward, and expectations for children have been shown to be influenced by naturally-occurring and experimentally-induced characteristics (Brophy & Good, 1974). It has been demonstrated that teachers hold different attitudes toward children as a function of their sex (Jackson & Lahaderne, 1967; Palardy, 1969), race (Rubovits & Maehr, 1973), socio-economic status (Bergen & Smith, 1966; Lenkowsky & Blackman, 1968; Neer, Foster, Jones, & Reynolds, 1973), physical appearance (Berscheid & Walster, 1974; Dion, 1972), body image (Staffieri, 1967), perceived intelligence (Matuszek & Oakland, 1979; Rubovits & Maehr, 1971), and behavior (Algozzine, Mercer, & Countermine, 1977; Giesbrecht & Routh, 1979; LaVoie & Adams, 1974).

The extent to which the aforementioned characteristics are influ-

ential in decisions focusing on the eligibility of a referred child for special education services has not been defined. This chapter addresses the extent to which decisions to declare a referred child eligible for special education services were influenced by referral information about the child. Differences in the nature of eligibility decisions as a function of professional role and knowledge of assessment were also investigated.

Procedure

Each participant selected assessment devices from within the seven domains (e.g., intelligence, achievement, etc.), until the subject indicated that he/she was ready to make a diagnostic decision about the child in the case description. Each subject then was asked to complete a series of questions (see Appendix A-5[2]), one of which required the subject to indicate the extent to which the participant thought the referred child was likely to be eligible for special education services. Subjects were asked to record their eligibility decisions on rating scales in which 1 = very likely, and 5 = very unlikely. For purposes of some descriptions, ratings of 1 or 2 were taken as representative of a decision of eligibility, ratings of 4 or 5 were taken as representative of a decision of ineligibility and ratings of 3 were seen as neither eligible nor ineligible decisions. In most instances, only numerical descriptions of eligible and ineligible decisions are presented in tabular form; that is, unclear eligibility decisions (e.g., ratings of 3) may be discussed in text but are not presented in tables. Data were available for 223 subjects who responded to the eligibility for special

education services question.

Overall Eligibility Decisions

Overall, 51.1% (N = 114) identified the referred child as eligible for services and 26.9% (N = 60) believed the child was ineligible. The decisions of 49 participants (i.e., 22%) could not be classified as eligible or ineligible with regard to outcome. Approximately one-half of the decision makers felt that a child, on whom average psychometric assessment information was reviewed, was eligible for special education services.

Eligibility as a Function of Referral Information

An overview of the extent to which participants declared the referred student eligible and ineligible in each of the sixteen conditions is presented in Table 7.1. Some differences in decision-making were evident.

Insert Table 7.1 about here

Eligible. In several conditions (8, 9, 14 and 15) over 60% of the subjects declared the referred child eligible, while only one condition (2) resulted in declarations of eligibility by less than 30% of the decision makers who reviewed the case. No pattern of naturally occurring pupil characteristics was evident in the participants' identification of pupils as eligible for special education services. Both male and female cases, of high and low SES who demonstrated behavioral and academic referral problems were judged eligible to varying degrees.

Ineligible. The likelihood of the referred student being declared ineligible for special education services never exceeded 50%, regardless of the referral statement provided to the participant. In several conditions (1, 6, 9 and 16) less than 15% of the participants declared the referred child ineligible; the child in condition 16 was never rated as ineligible for services.

Eligibility as a Function of Professional Role

When participants (N = 223) were classified according to professional role, the percent of individuals identifying the referred child eligible and ineligible did vary. These descriptive data are presented in Table 7.2.

Insert Table 7.2 about here

Of the professions represented, regular educators declared the referred child eligible for services most often (61.2%). School administrators as a group, on the other hand, were the least inclined to declare the referred child eligible for services (32.1%).

In addition to having the lowest percentage of declarations of eligibility, school administrators identified the referred child as ineligible more often than any other profession (50.0%). Other roles varied with respect to their rates of identifying the child ineligible. Special educators were the group that was least likely to declare the child ineligible for services.

The final option was to remain undecided. In contrast to the relatively low percentage of ineligibility decisions made by special educators, this group had the highest percentage of undecided responses with respect to identifying student eligible/ineligible for services. Very low proportions of undecided responses were recorded for school psychologists, regular educators, and school administrators. Each of the aforementioned professions had exhibited high rates of identifying the child as eligible (i.e., regular educators, school psychologists) or ineligible (i.e., school administrators).

Eligibility as a Function of Knowledge of Assessment

Eligibility ratings by participants grouped according to knowledge of assessment (as indicated by pretest score) are summarized in Table 7.3. An analysis of these data indicated that there was little association between one's knowledge of assessment and the type of eligibility decision made.

Insert Table 7.3 about here

Summary

Participants were asked to determine whether or not the referred child was eligible for special education services. Results of this inquiry indicated that 51% of the professionals identified the referred child eligible for special education services. When participants' decisions were reviewed as a function of referral condition, professional role, and knowledge of assessment, several interesting factors emerged.

When eligibility decisions were reviewed as a function of referral problem (sixteen conditions), all but one condition resulted in declarations of eligibility by at least 40% of the professionals reviewing the condition. The child was declared eligible on the basis of an unenlightening referral statement and assessment information that clearly indicated the child's test performance and behavior were within the average range.

The percentage of individuals identifying the referred child eligible or ineligible did vary according to role. Regardless of role, at least one-third of all participants identified the referred child eligible for special education services; in one instance (regular educators), over 60% had identified the child as eligible. Rarely did professionals remain undecided with respect to identifying the child eligible/ineligible for services, with high rates of either eligible or ineligible decisions resulting in very low rates of undecided statements.

An analysis of eligibility decisions as a function of the participant's knowledge of assessment indicated no relationship between one's knowledge of assessment and accurate decision-making practice. Both individuals scoring very low (6-10) and very high (21-25) on the assessment pretest declared the referred child eligible at least 57% of the time.

It seems, then, that professionals engaging in a diagnostic simulation for an average youngster demonstrated biased eligibility decision making. There appeared to be a high probability of "eligibility" for special services (i.e., 51%) when various types of youngsters were evaluated; similarly, some professionals appeared to be more biased than others (e.g., regular vs. special educators).

Chapter 8

Classification Decisions

Federal and state funding guidelines, such as those resulting from PL 94-142, require school personnel to classify students before special education services may be provided. One of the main purposes of the assessment process is to provide information with which school personnel can make these classification decisions. Since any classification decision may have a profound and lasting effect on a student's life, it is important that these decisions be accurate and thus that they be made on the basis of data that are not only technically adequate, but that have been appropriately interpreted by the decision makers (Elstein & Bordage, 1979).

While decision makers are repeatedly urged to base their decisions on objective, reliable, and valid assessment practices (Salvia & Ysseldyke, 1978), it is rare that this is the sole basis on which decisions are made. Whether intentionally or unintentionally, decision makers are often influenced by such variables as the child's sex, physical appearance, the family's socioeconomic status, and/or a subjective referral statement (cf. Giesbrecht & Routh, 1979; Ross & Salvia, 1975). Even so-called "objective" test data may be interpreted in vastly different ways by different people or differently by the same person for different children. It seems that a final classification decision is the result of not just the data at hand, but rather of an interaction that is a function of a) the person making the decision; b) the data itself; and c) the child about whom the decision is being made.

The information contained in this chapter relates to the classification decisions made by various school professionals after they had gone through a simulated assessment procedure. All of the information provided to the reviewers was actually within the normal range, and while the demographic and referral information was varied systematically, the assessment data remained the same across all cases. The investigators wished to see the degree to which school professionals felt that the student whose case they had reviewed was mentally retarded, learning disabled, and/or emotionally disturbed.

Procedure

After reviewing the case folder and going through the assessment process, each subject was asked a series of decision questions and questions about how those decisions were made. The questions of interest for this chapter requested the participants to rank, on a five point Likert scale, the degree to which they felt the child was eligible for services, and the degree to which they felt the student was likely to be mentally retarded, learning disabled, or emotionally disturbed. These ratings ranged from 1 = very likely to 5 = very unlikely; in some cases, ratings of 1 and 2 were grouped together as were ratings of 4 and 5. When the original scale ratings were analyzed, means and standard deviations served as units of analysis. When categorical groups (e.g., eligible vs ineligible) were formed by collapsing scores, percentages of subjects to make various decisions were analyzed and described. Data on classification decisions were available for 223 subjects.

Each participant rated the referred case on all three classification

questions; several questions were of interest and results are presented in a descriptive manner relative to each area of concern. For example, the overall extent to which the referred child was classified as mentally retarded, learning disabled, or emotionally disturbed was investigated. Further analyses compared decision making for each case as a function of the referral information provided, the reviewer's role (i.e., school psychologist, special education teacher, school administrator, regular education teacher, or support personnel), and the reviewer's knowledge of assessment as measured by the pretest. Since it was discovered that the subjects' declaration of a child as being eligible for special education services (see Chapter 7) was not always consistent with the classification decisions made (e.g., see Ysseldyke, Algozzine, Regan, Potter, & Richey, 1980a, case studies 3 and 4), the analyses were also broken down by the eligibility decision.

Overall Classification Decisions

Of the 223 subjects who responded to the classification question, eight stated that the referred student was likely to be mentally retarded, 103 felt that the student was learning disabled, and 48 indicated the presence of emotional disturbance. Only 60 of the 223 subjects clearly recognized that the assessment data on the referred student did not support classifying the student as being learning disabled. Likewise, 123 of the subjects recognized that the student was not emotionally disturbed. A review of the mean ratings on the five point Likert scale further indicated the propensity of the subjects to declare the student learning disabled. The overall mean rating for mental retardation was 4.7 (range 4.2 to 5.0). The mean rating for learning disabilities was 2.7 (range 2.3

to 3.4) and the mean for the category of emotional disturbance was 3.5. (range 2.9 to 4.1).

Classification as a Function of Referral Information

The distribution of various types and kinds of classification decisions for the sixteen referred "cases" is presented in Table 8.1. In all but three of the conditions, when the child was classified, the most commonly used classification was learning disabled. The three exceptions were conditions 4, 11, and 16, all of which had a behavioral referral problem. In these conditions the child was classified as emotionally disturbed as often or more often than being classified learning disabled. While subjects were consistently reporting that the student was not mentally retarded across all conditions, in 13 of the 16 cases the child was more often declared likely to be learning disabled than to be considered unlikely to be learning disabled.

Insert Table 8.1 about here

There were 22 instances in which a subject indicated the child was likely or very likely to be mentally retarded, learning disabled, or emotionally disturbed even though those subjects had previously declared that child to be ineligible for special services. For those subjects who had declared the student to be eligible for services, the majority perceived the student as being likely to be learning disabled (see Table 8.2). This was generally true across all 16 referral conditions. There were three conditions (1, 13, 14; all with academic referral statements) in which the only classifications were for learning disabilities and only two cases (15, 16; both with behavioral

referral statements) in which the student was more often seen as falling into a category other than learning disabilities (i.e., emotional disturbance). Of the 49 subjects who were not sure whether the student was eligible for services, half still stated that the student was likely to have a handicapping condition and once again, learning disabilities was cited most often.

Insert Table 8.2 about here

Classification as a Function of Professional Role

Classification decisions were also examined as a function of the professional role of the case reviewer (i.e., school psychologist, special educator, school administrator, regular education teacher, or support personnel). Review of the data (see Table 8.3) indicated some variability in the degree to which different professionals were willing to classify students. The various professionals were fairly consistent in their estimation of the student as being mentally retarded; that is, 82 to 97 percent of the participants indicated that the student was not mentally retarded. As a group, school psychologists were the most definite in their rejection of the possibility of mental retardation.

Insert Table 8.3 about here

With one exception, classification of emotional disturbance was fairly consistent. From 14 to 17 percent of all professionals, except regular educators, indicated that the student was likely to be emotionally disturbed. The student was classified as emotionally disturbed by 34 percent of the regular educators.

The largest amount of variability was apparent in the category of learning disabilities. The percentage of professionals indicating the student whose case they had reviewed was learning disabled was 47, 50, 25, 40, and 74 for school psychologists, special educators, administrators, regular educators, and support personnel, respectively. Support personnel were by far the most likely to say that the student was likely to be learning disabled (mean rating 2.2). School administrators were the least likely to classify the student as either learning disabled or emotionally disturbed, although they were the most likely in relation to the other role categories, to call the student mentally retarded.

Classification decisions made by various kinds of professionals were also analyzed in relation to the eligibility for services decision that had been made earlier (see Table 8.4). Across all roles, when the child was declared to be eligible for services, the tendency was for the reviewer to say that the student was likely to be learning disabled. School psychologists and support personnel were the most consistent about not classifying the child into one of the handicapping categories after having declared them ineligible for services. However, support personnel were particularly likely to perceive the child as being learning disabled if they were sure the student would be eligible for services or even if they were not sure about eligibility for services. Regular educators were more prone to see the student as being emotionally disturbed than the other types of professionals, no matter what their eligibility decision had been.

Insert Table 8.4 about here

Classification as a Function of Assessment Knowledge

The types of classification decisions made generally did not vary as a function of the subjects' performances on the pretest (see Table 8.5); however, some differences were indicated. Most decisions indicating that the student was likely to be mentally retarded were made by subjects scoring low or very low on the pretest; however, even in these categories, 92 and 91 percent of the subjects identified the student as not being mentally retarded. Even though those individuals with high pretest scores were apparently quite familiar with measurement and assessment principles and practices, 53 percent said the data indicated that the student was likely to be learning disabled and 26 percent said the student was likely to be emotionally disturbed. Those subjects scoring moderately high (16-20 correct) on the pretest did especially well in recognizing that the student was not emotionally disturbed; only two of the 34 people in this category (6%) indicated the likelihood of emotional disturbance.

Insert Table 8.5 about here

Subjects who scores in the high or very high range on the pretest and who had said the child would be eligible for services, were particularly prone to indicate that the child was likely to be learning disabled (see Table 8.6). For the 22 people who did not feel the child would be eligible for services, but who did feel the student would be likely to exhibit one of the handicapping conditions, scores on the pretest in the range of 11-15 were the most common.

Insert Table 8.6 about here

Summary

While it seems reasonable to expect classification decisions to be based primarily on available objective data, in this investigation it is apparent that this was not the case for many, if not most, of the subjects. Apparently the objective data were either interpreted inappropriately or outweighed by other information such as the referral statement.

The most influential piece of child information was the subjective referral statement of the child's classroom difficulties. Even though this statement consisted of not uncommon difficulties for a fifth grader, it played a definite role in determining whether the child was apt to be seen as learning disabled or emotionally disturbed. A child with behavioral referral problems was seen as emotionally disturbed and one with academic problems as learning disabled.

Subject variables also apparently affected the classification decisions made. Both the professional role of the subject (reflecting training and experience) and the estimated knowledge of the subject in the area of assessment and measurement were related, in some instances, to whether and how that subject classified the student. Unfortunately, for the most part, having greater training, experience, and knowledge about the assessment/decision-making process did not lead to significantly better decisions (i.e., decisions consistent with the data available). Whether the data were not being appropriately interpreted by the sub-

jects, with interpretations being more heavily influenced by individual subject characteristics rather than standard procedures, or whether decisions were based on some factor other than the actual scores (e.g., a subjective "feeling") was not possible to ascertain from this study. In any event it is apparent that some variable or variables were operating in the decision-making process which tempered the influence of objective data.

The classification decisions made in this investigation reflect the common tendency to label a child learning disabled if there is nothing to indicate any other handicap. What is surprising is the extent to which the child was classified as learning disabled even when there was no indication of any handicap. Not only was learning disabilities the most commonly used classification when the child was said to be eligible for services, but also when the subject indicated ineligibility or uncertainty about eligibility.

Ten percent of the subjects declared the student to be ineligible for services, but then went on to classify the student as likely or very likely to exhibit one of the handicapping conditions. In addition, approximately 20 percent made classification declarations even though they did not make a distinct choice about eligibility. Such an inconsistency is a direct contradiction of the core of PL 94-142. While this type of inconsistency may not be that uncommon in the face of school district economics, economics did not play a role in this simulation. If the purpose of classification is to allow for the provision of services, one wonders why some decision makers are willing to attach the label without providing the accompanying services provided by "eligibility."

It is apparent that not only must decision makers have access to and use technically adequate assessment devices, but they also must use this information, and all of the information they have about a child, in an appropriate manner. Educational decisions are too important to be heavily influenced by characteristics of individual decision makers or by peripheral characteristics of the child. In this investigation, a child, on whom average psychometric test performance was available and accessed, was classified as mentally retarded, emotionally disturbed, or learning disabled by various decision makers.

Chapter 9

Prognostic Decisions

One cannot escape the fact that assessment is clearly an ever present activity in educational settings, taking many forms and frequently encompassing interrelated and often complex issues impinging on the development and implementation of educational programs that must meet the unique needs of individual children. Broadly defined, assessment is the process of collecting data for use in making decisions about students. Salvia & Ysseldyke (1978) differentiated five kinds of educational decisions, indicating that assessment data were used in making of screening, classification/identification/eligibility/placement, instructional planning, pupil evaluation, and program evaluation decisions.

Specific issues have evolved at each level of assessment and decision making. Ysseldyke and Algozzine (1979) have indicated that decisions educators make are hierarchical in nature. School personnel decide who to refer for assessment, they decide who is eligible for services, they decide where to place students, they decide the nature of the intervention to be used, they decide the extent to which pupils are making progress, and they decide whether or not intervention programs are effective. Assessment data collected and reviewed by diagnostic personnel during the psychoeducational decision-making process rarely serve as the data source for only one level of decision making. Perceptions and impressions of child characteristics and behavior prior to assessment, during assessment, and following assessment bias the "objective and

logical" sequence of events defined as psychoeducational decision making.

For example, a variety of naturally-occurring student characteristics has been shown to influence the formation of negative attitudes toward students and serve as sources of differential teacher-pupil interactions (Algozzine, 1975; Braun, 1976; Brophy & Good, 1974; Ysseldyke & Algozzine, 1979). The affective behavior of an examinee has been shown to be influential in test performance when the actual content of the item responses was controlled (Masling, 1957, 1959) and expectancies held for children labeled as to various special education categories have been shown to be qualitatively different than those held for normal youngsters. In short, bias occurs in all phases of diagnostic decision making.

Prognostic decisions (i.e., predictions of future performance) are important aspects of teacher-student interactions; they may form the basis for programming practice and future relationships between teachers and students. Addressed in this chapter is the extent to which several perceptions educational personnel held following their assessment of the referred student were influenced by various other factors within the simulation study. Specifically, investigators were interested in evaluating the extent to which individual educators' perceptions of the referred child's potential for performance in three skill areas (i.e., speech, reading, and math) were a function of related experimental factors (i.e., referral conditions, professional roles, etc.).

Procedure

After reviewing the case folder and going through the assessment process, each subject was asked a series of decision questions and questions about how those decisions were made. The questions of interest

and discussion for this chapter requested the participants to rank on a five point Likert scale (1 = very likely, 5 = very unlikely), the degree to which they felt the referred child was likely to experience difficulty in the areas of speech, mathematics, and reading. Data were available for 223 subjects.

Each subject rated the referred student case on all three prognostic questions (i.e., speech problem, reading difficulty, mathematics difficulty). The ratings were interdependent; results are reviewed in a descriptive manner. For purposes of these analyses, ratings of 1 or 2 were taken to mean that the specific problems or difficulties were likely, and ratings of 4 or 5 were taken to mean they were unlikely. A rating of 3 was taken as a non-specific decision with regard to future problems.

Analyses were completed for several different factors; in fact, the nature of the referral information, the reviewer's role (i.e., school psychologist, special education teacher, school administrator, regular educator, or support personnel), and the reviewer's knowledge of assessment as measured by the pretest served as grouping variables.

Overall Prognostic Decisions

In general, after reviewing assessment information suggestive of "average" performance, participating subjects responded differently to the extent to which future performance problems were likely. When asked about future speech problems, eight percent (N=18) of the subjects indicated they were likely and 73 percent felt they were unlikely. Opposite results were indicated for the likelihood of reading problems; 73 percent of the participants felt they were likely and 10 percent indicated such problems were unlikely. With regard to math difficulties, a similar

number of subjects made non-specific decisions (25) as had for speech problems and reading difficulties (19 and 17 respectively); however, 44 percent of the participants felt that difficulties in math were likely and 31 percent felt they were unlikely. It appears, at least at this descriptive level, that different prognostic decisions were made based on the area in which predictions were being made.

Prognoses as a Function of Referral Information

For the most part, prognostic decisions did not vary as a function of referral conditions. However, selective prognoses for some individual cases were interesting. For example, over 90 percent of the subjects reviewing case information in four of the referral conditions felt that reading difficulties were likely; these included the unattractive boy from a low SES family who was referred for behavior problems, the unattractive and attractive girl from a high SES families who were referred for academic problems, and the unattractive girl from a low SES family who was referred for academic problems. Speech problems were rated as least likely (i.e., 73% of subjects rated problems as unlikely) in an attractive girl from a high SES family who was referred for a behavior problem. The number of times (as reflected in percentages) various types of problems were differentially rated according to each referral condition is presented in Table 9.1; means and standard deviations also are presented.

Insert Table 9.1 about here

Prognoses as a Function of Professional Role

School personnel from several different professional roles were

represented within the total sample for this study; school psychologists, special education teachers, school administrators, regular class teacher, and other professionals (e.g., social workers, school nurses, etc.) participated. The number of times (as reflected in percentages) various skill problems were considered as likely or unlikely, by various professionals is presented in Table 9.2. In general, the response patterns were similar to those obtained when professional role was ignored as a grouping variable; that is, speech problems were rated as unlikely and reading difficulties were rated as likely by high percentages of subjects (regardless of role). The likelihood of math difficulties was relatively evenly represented across the rating options for various types of practitioners. Professional role does not seem to be a determining factor in prognostic decision making as conceptualized here.

Insert Table 9.2 about here

Prognoses as a Function of Assessment Knowledge

Knowledge of various aspects of psychoeducational assessment practices was evaluated via a 25-item pretest (see Appendix A-1); the range of scores obtained by participating subjects was 0-24 (total score possible was 25). Four comparison groups were created based on the level of knowledge demonstrated on the pretest; prognostic decision making within and among the groups was evaluated. The percentages of subjects in various knowledge-based groups to make selected prognostic decisions are presented in Table 9.3. As has been discussed, reading difficulties were seen as more likely and speech problems less likely; this outcome was consistent across groups with differing levels of knowledge. More individuals in

the highest level of knowledge group (i.e., 21-25 correct) tended to rate the speech problems as unlikely and reading difficulties as likely than in the other groups.

Insert Table 9.3 about here

Summary

Professionals participating in simulated decision making were asked to make prognostic decisions about the referred child; future performance predictions in speech, reading, and math areas were obtained. In general, reading difficulties were rated as likely and speech problems were rated as unlikely in spite of average student performance data having been reviewed by the participating subjects. Differential likelihood of math difficulties in prognostic decision making was not observed; similarly, few differences in prognostic decision making were observed relative to the type of child referred, the professional role of the participant, or his/her level of assessment knowledge.

Chapter 10

Placement Decisions

Professionals from a variety of different educational positions participate in the review of information in order to make decisions about a child who has been referred to them. Not only do they decide whether the child is eligible for services and how the child should be classified, but they also decide on the most appropriate placement to meet the needs of the child. The placement decisions made by educational personnel in the simulated diagnostic study are the topic of this chapter. Of interest was the overall placement decisions made and the decisions made as a function of referral information, professional role, and the professionals' knowledge of assessment. In addition, placement decisions were studied as a function of the classification assigned to the child.

Procedure

After having reviewed sufficient information about the child, participants were asked to make eligibility, diagnostic, and placement decisions. With regard to placement decisions, several alternatives were available. Subjects were asked to rank regular class placement, regular class placement with consultation, part-time resource room, full-time resource room, full-time special class, and extra school placements as appropriate for the referred child; rankings of 1 were considered most appropriate and rankings of 6 least appropriate. Data were available for 224 subjects.

Overall Placement Decisions

The number of subjects to select each of the possible rankings

for the six placement alternatives is presented in Table 10.1; the relative percentages of subjects to select each ranking is also presented. In general, subjects indicated that the less restrictive placements (i.e., regular class placement, regular class with consultation) were appropriate for the referred child and the more restrictive placements (i.e., full-time special class, extra-school placements) were less appropriate. It is interesting to note, however, that many subjects (approximately 50%) felt that regular class with consultation and part-time resource room placements were very appropriate for a child on whom average psychoeducational assessment information had been reviewed; four people felt than an external school placement would be appropriate for such a child.

Insert Table 10.1 about here

To simplify subsequent analyses, subjects with rankings of 1 or 2 were grouped together; all others were represented as a separate group. A review of the placement decisions of these new groups revealed that approximately 60% of the subjects felt that regular class placement was inappropriate and 20% felt that regular class with consultation was inappropriate. Greater than 75% of the subjects felt the full-time resource room was inappropriate, while greater than 90% of the subjects felt that full-time special class and/or extra-school placements were inappropriate for the referred child.

Placement as a Function of Referral Information

As has been discussed, 16 different "types" of children were presented to participating subjects (see Chapter 2). The number of sub-

jects to rank various placement alternatives as appropriate for each different type of child is presented in Table 10.2; relative percentages within each referral condition are also included. In general, selection of placement alternatives for the various types of children was similar to that previously described. That is, less restrictive alternatives were selected as appropriate more frequently than more restrictive alternatives. In some cases, however, special education alternatives were seen as more appropriate. For example, 90% of the subjects who received information indicating that the referred child was an attractive girl with academic problems from a high SES family felt that special education alternatives would be appropriate school placements. Similarly, many subjects who thought that the referred child was a low SES female felt that part-time resource room was the best placement.

Insert Table 10.2 about here

Placement as a Function of Classification

Participants in the computer simulation study were asked to review psychoeducational assessment information about a child and then make decisions about the eligibility of the child for diagnostic classifications in the categories of educable mentally retarded, emotionally disturbed, and learning disabled. The placement decisions of those individuals who found the child eligible for each of the various special education categories were analyzed. The number of subjects to select each placement alternative as appropriate according to diagnostic classification is presented in Table 10.3; relative percentages of subjects within each classification type are also indicated. The most

common diagnostic classification decision was that of learning disabled (e.g., 103 participants felt that the classification was appropriate for the referred child). Approximately 80 percent of these subjects felt that regular class placement with consultation and/or part-time resource room was the most appropriate placement for the "learning disabled" child. The referred child was diagnosed as emotionally disturbed by 48 participants; the less restrictive special education alternatives were again selected as the most appropriate. Only eight participants felt the child was mentally retarded; more felt that regular class with consultation, part-time resource room placements and/or full-time resource placements were more appropriate than regular class placements for such a child. It should be noted that no evidence to support diagnostic classification was available.

Insert Table 10.3 about here

Placement as a Function of Professional Role

Five types of professionals participated in the diagnostic simulation study (see Chapter 3). The number of subjects to select various placement alternatives grouped according to professional role is presented in Table 10.4; relative percentages within each group are also indicated. In general, professionals' placement recommendations were similar for each alternative available. That is, the same relative number of school psychologists, special teachers, school administrators, regular education teachers and other school personnel indicated that regular class placement was appropriate for the referred child; additionally, their decisions as to the appropriateness of the various

special education placements were similarly distributed.

Insert Table 10.4 about here

Placement as a Function of Knowledge of Assessment

Knowledge of various aspects of psychoeducational assessment was evaluated through a 25-item pretest (see Appendix A-1); the range of scores obtained by the professionals from varying backgrounds was quite large (i.e., 0-24, maximum score was 25). Four comparison groups were created based on level of knowledge demonstrated on the pretest; appropriateness of various placement alternatives as rated by members of each of these groups was evaluated. Number of subjects to select various placement alternatives as appropriate grouped according to knowledge of assessment is presented in Table 10.5; relative percentages of subjects within each group are also indicated. To some extent, less restrictive placement alternatives (e.g., regular class, regular class with consultation), were seen as appropriate more often by participants with a greater knowledge of assessment as measured by the assessment pretest. As was indicated previously, the less restrictive alternatives were the most frequent choices.

Insert Table 10.5 about here

Summary

Subjects within this diagnostic simulation study were asked to indicate the relative appropriateness of various educational placements. For the most part, less restrictive classroom placement alternatives

were selected most frequently. Some differences were indicated in the extent to which various groups of subjects selected certain alternatives.

Chapter 11

Factors Perceived as Influencing Decisions

School personnel involved in the making of educational decisions about a child typically are faced with a large and varied amount of information. This information includes characteristics of the individual child (e.g., sex, age, attractiveness, race, etc.), as well as objective assessment data collected specifically for decision-making purposes. Considerable time and effort go into the decision-making process, but very little is understood about this process in educational settings. While investigators have looked at the kinds of data educational decision makers collect (Poland, Ysseldyke, Thurlow, & Mirkin, 1979; Santamaria, 1975; Silverstein, 1963; Thurlow & Ysseldyke, 1979), we know little about the actual influence of different kinds of data on decisions.

A review by Braun (1976) cites a number of studies which indicate that teachers do form expectancies about children and that these expectancies may differentially affect the child's classroom performance. While most studies have been conducted by inducing expectancies, Mendels and Flanders (1973) suggest that it may be more profitable to look at naturally-occurring physical characteristics of the student (e.g., sex, attractiveness, motivation, and socioeconomic status). Several investigators have, in fact, found that such factors do influence teacher-pupil interactions (Adams & Cohen, 1974; Berscheid & Walster, 1974; Levitin & Chananie, 1972).

Whether teachers and other decision makers perceive these same factors as being influential is an issue that has not been examined. It may be that a decision-maker's perception of what data were influential

are not always congruent with the data shown empirically to have the greatest impact on the decision made. While a decision-maker's perception of the influence of a certain piece of information may not be consistent with its actual influence, it is this perception of usefulness that may guide the person's collection and use of data.

The information provided to the subjects in the present study was designed to reflect test performance and personal characteristics of an average student. We have seen that subjects in this investigation often did indicate the student to be eligible for services (Chapter 7), they were willing to classify the student as mentally retarded, learning disabled, or emotionally disturbed (Chapter 8), and they predicted difficulties in math and reading (Chapter 9) in spite of the disconfirmatory data. The current chapter addresses the issue of what information was perceived by these decision makers to be useful in the making of the eligibility, classification, prognostic, and placement decisions. Of interest were the subjects' perceptions overall and as a function of referral information, the professional role of the subjects, and the subjects' knowledge of assessment as measured by the pretest.

Procedure

After completing the series of decision questions (eligibility, classification, prognostic, and placement), the subject was asked to indicate the degree to which various types of information (e.g., the seven domains of assessment data, discrepancies between intelligence and achievement scores, subtest score discrepancies, and the four naturally-occurring child characteristics--sex, SES, attractiveness, and referral problem) influenced the decisions that had been made. Subjects

indicated the degree of influence using a Likert scale ranging from 1 to 5, where 1 = very significant influence and 5 = very insignificant influence. Data were available for 224 subjects.

Ysseldyke, Algozzine, Regan, and McGue (1979) ran formal statistical analyses to examine the extent to which there were main effects for types of assessment data perceived as influential as a function of different kinds of referral information (sex, SES, problem statement, or appearance). Also examined was the extent to which specific types of data were perceived as useful across conditions. The present chapter will take a descriptive approach in examining the extent to which various types of assessment data and child characteristics were perceived as influential across conditions, as a function of the professional role of the subject, and according to the subject's degree of knowledge of assessment and measurement principles as measured by the pretest.

Mean ratings were calculated for each type of assessment domain or testing information (e.g., discrepancies) as well as for each child characteristic by referral condition, role, and pretest score. Also calculated were percentages of subjects declaring that a given domain of information had a significant (Likert rating of 1 or 2) influence or an insignificant (Likert rating of 4 or 5) influence on their decision. A Likert rating of 3 was assumed to reflect non-specific influence of that particular type of information.

Overall Perceived Influence of Factors

Table 11.1 summarizes the percentages of subjects designating significant or insignificant influence to each of the 13 factors as

well as the mean rating given to each factor. Overall, subjects indicated that information gathered from intelligence tests, measures of academic achievement, and discrepancies between performance on achievement and intelligence devices had the greatest influence on the decisions they made ($\bar{X}$ = 2.1, 1.8, and 1.9, respectively). Scores on language tests were perceived to have the least impact of the test scores on decisions ($\bar{X}$ = 3.1). It is important to note that all test performance data depicted an average child. Subjects further indicated that the perceived influence of the child's sex, SES, and appearance was minimal ($\bar{X}$ = 4.2, 3.9, 4.1, respectively), but that the nature of the referral statement was very influential ($\bar{X}$ = 1.9). In fact, only two percent (N = 5) of the subjects indicated that the referral statement had an insignificant influence on their decisions.

Insert Table 11.1 about here

Perceived Influence of Factors as a Function of Referral Information

The results were examined in terms of their breakdown by the 16 referral conditions (see Table 11.2 for data on measures). This breakdown reveals several variations in the general pattern noted above for the perceived influence of various kinds of assessment information. In Condition 4 (male, high SES, behavioral referral, unattractive) only one-third of the subjects felt that the results of intelligence tests had a significant influence on their decisions ($\bar{X}$ = 2.9). In no other condition did less than 64% of the subjects feel that intelligence tests were a significant influence. The overall tendency of subjects to view

achievement measures as being more influential or equal to intelligence measures held true in 14 of the 16 conditions. The percentage of subjects who perceived discrepancies between performance on intelligence and achievement as being influential was fairly consistent across all conditions. Generally, personality tests, behavioral recordings, and adaptive behavior scales were seen as more influential in those conditions where the reason for referral was behavioral in nature. Again, this assessment information was not particularly enlightening with regard to any specific pathology or disorders.

Insert Table 11.2 about here

Although language tests were perceived overall to have the least influence (see Table 11.1), this was not consistent across all conditions. In fact, language tests were perceived as least influential in only four conditions; a variety of other devices (i.e., adaptive behavior, personality, perceptual motor devices) were seen as equally or less influential in the remaining conditions.

Table 11.3 presents the breakdown of the perceived influence of the child's sex, socioeconomic status, physical appearance, and the referral statement of the problem. Across all conditions, the child's sex, socioeconomic status, and physical appearance were perceived to have an insignificant influence on decisions, with no mean rating falling under 3.4 and most ratings greater than 4.0. The referral statement of the problem, on the other hand, was consistently seen as having a significant influence on decisions made.

Insert Table 11.3 about here

Perceived Influence of Factors as a Function of Professional Role

When responses were considered in terms of the professional role of the subjects, very little variation was noted across roles. School psychologists seemed particularly prone to view intellectual and personality test data as being influential, while not relying heavily on adaptive behavior information; they also viewed information from language tests as being quite insignificant. Support personnel also tended to view intellectual information as being more significant than did the other types of professionals. They felt that perceptual-motor tests had a significant influence on their decisions as well and tended to make fewer non-specific choices. These data appear in Table 11.4. There was no great variation across roles when looking at the perceived influence of sex, SES, appearance, and referral statement (see Table 11.5).

Insert Tables 11.4 and 11.5 about here

Perceived Influence of Factors as a Function of Assessment Knowledge

Tables 11.6 and 11.7 present the breakdown of perceived influence of test and child characteristic information as a function of scores achieved by subjects on the pretest. Of the subjects who answered 16 or more of the 25 pretest questions correctly, none viewed the academic or achievement information as being insignificant. This same group of subjects attributed relatively greater influence to perceived discrepancies between intelligence and achievement than did those subjects with lower scores. Subjects scoring in the 21-25 correct range were particularly prone to view intelligence devices as influ-

ential ($\bar{X}$ = 1.7) when compared to subjects with lower scores. They were also much less likely to attribute significance to language test scores. While none of the groups attributed a great degree of significance to socioeconomic status or physical appearance, subjects with lower scores were somewhat more likely to feel that these factors played a role in the decisions they made.

Insert Tables 11.6 and 11.7 about here

Summary

Subjects were consistent in their perceptions of intelligence test information, achievement test performance, the differences between performance on intelligence and achievement devices, and the referral statement of the problem as having significant influences on their decisions. This held true regardless of the characteristics of the child, the professional role of the subject, or the subject's general knowledge of assessment principles and practices as measured by the pretest.

When looking at individual subjects (see Ysseldyke, Algozzine, Regan, Potter, & Richey, 1980a), it may be noted that not in all cases had a subject actually looked at a given domain of assessment devices before indicating that that type of device had a significant influence on the decisions made. The problem of subjects not being able to accurately represent their decision-making process is a common concern in decision-making/problem-solving research (Ericsson & Simon, 1979; Nisbett & Wilson, 1977; Smith & Miller, 1978). In a controversial review of studies relating to the accuracy of verbal reports, Nisbett and Wilson

concluded: (a) people often cannot accurately report on the effects of a particular stimulus on inference-based responses; (b) subjects may base their reports on the effects of stimuli on implicit, a priori theories about the causal connection between stimulus and response; and (c) even correct reports are due to the incidentally correct use of a priori causal theories.

Nisbett and Wilson's emphasis on the role of a priori hypotheses is echoed by Elstein and Bordage (1979) and Elstein, Schulman, and Sprafka (1978). These authors point out the major role of hypotheses formed early in the medical decision-making process. Not only do decision makers gather data on the basis of their initial hypothesis, but any data gathered are evaluated in terms of their contribution to the hypothesis. Unless data are perceived as being distinctly disconfirmatory, they are viewed as confirming the original hypothesis (Elstein, Schulman, & Sprafka, 1978).

As Jason (1978) points out, the most common interpretive error in decision making is that of overinterpretation. The human tendency to simplify complex tasks seems to be most commonly expressed by assigning new information to existing hypotheses rather than creating new hypotheses or remembering the new information separately (Jason, 1978). It seems likely that this is happening in the present investigation also. The referral statement is not only perceived by subjects to have a considerable degree of influence, but it has been shown empirically (Ysseldyke, Algozzine, Regan, & McGue, 1979) to be a major factor in the decisions made. Therefore, any data collected subsequent to the referral statement, unless strongly discrepant, are apt to be viewed as confirming any hypotheses

based on this statement. That subjects placed such importance on a subjective referral statement even when that statement did not in itself indicate a severe problem, and available objective data did not support the presence of a problem, emphasizes the major role that the act of referral plays in the whole assessment and decision-making process.

Chapter 12

Expectations for Various Handicapping Conditions

Researchers have suggested that what we see may be a function of what we expect to be "out there"; and further, that we see things not as "they" are, but as "we" are (Postman & Weingartner, 1969). Since Rosenthal and Jacobson (1968) published their controversial study of the effects of teachers' expectations on the evaluation of children's classroom performance, considerable research has focused upon the expectancy phenomenon. Although initial research was of a contrived (i.e., induced) nature (Elashoff & Snow, 1971; Snow, 1969; Thorndike, 1968), recent investigations have shown that naturalistic factors may be more potent determinants of expectations (Mendels & Flanders, 1973; Rubovits & Maehr, 1973; Seaver, 1973). Such expectations may influence the identification of students as handicapped.

Sources of information concerning the actual number of children who exhibit various handicaps are provided by such organizations as the American Association of Mental Deficiency (AAMD) and government agencies such as the Bureau of Education for the Handicapped (BEH). However, under the best of conditions, there are several factors that make it difficult to determine with much accuracy the actual number of handicapped children within specific categories. Such problems include changing definitions of certain handicaps, methods of assessing children's intelligence, sampling errors, the role of the schools, and stigma of being identified as handicapped (Hallahan & Kauffman, 1978). Nevertheless, since the implementation of PL 94-142, schools have

been charged with both identifying and providing services for all handicapped individuals aged three to 21.

Prior to full ratification of PL 94-142, the U. S. Office of Education, Bureau of Education for the Handicapped, estimated in 1975 that the overall percentage of children ages 6-19 who were handicapped was slightly more than 12%; the estimate of such children ages 0-5 at that time was 6%. A breakdown of these data by handicap is presented in Table 12.1, along with percentages of those who were or were not receiving special services during the 1974-1975 school year. These data reveal that the category of speech-impairment had the highest estimated incidence rate (3.5%), learning disabled received the next highest estimate (3.0%), and mentally retarded and emotionally disturbed had similar estimates, 2.3% and 2.0%, respectively. The remaining categories (e.g., crippled and other health impaired, deaf, hard-of-hearing, visually handicapped, and deaf-blind and other multihandicapped) all were estimated to be less than .6%.

Insert Table 12.1 about here

A requirement of PL 94-142 specifies that the U.S. Office of Education, Bureau of Education for the Handicapped, submit an annual report to Congress concerning the status and number of handicapped individuals being served. The first of these reports submitted in January of 1979 yielded information regarding the percentages of school-aged children who were served during the 1977-1978 school year;

these data regarding both national totals and totals for the State of Minnesota are presented in Table 12.2. The highest percentage for Minnesota was for the category of learning disabled (2.75%), while speech problems was the largest category (2.39%) for the national totals. Handicaps having the lowest incidence were health impaired (.27%), orthopedically impaired (.17%), deaf and hard of hearing (.17%), and visually handicapped (.07%), and were approximately comparable for Minnesota and the nation. The total percentage of handicapped children being served was 7.36% nationally and 7.54% for Minnesota.

Insert Table 12.2 about here

A recent review of literature on prevalence of various handicaps was conducted for the Office of Education, BEH, and revealed that reported prevalence estimates fell within relatively restricted ranges. These ranges are reported for each category in Table 12.3.

Insert Table 12.3 about here

The numbers and relative percentages of selected types of children with various handicapping conditions are presented in Table 12.4. Relatively small percentages of children (i.e., 1-3%) are indicated within any category of handicap.

Insert Table 12.4 about here

In summary, past and recent estimates of the total percentage of

handicapped children in the school-aged population range from 12% (1975 estimates) to 7.5% (1979 estimates). These percentages range from 2 to 3% for high incidence handicaps (e.g., speech impairment and learning disabilities) to .06% for low incidence disorders (e.g., orthopedically handicapped, visual impairment, and deaf or hearing impaired). From these data it would appear that the actual number of handicapped children of school age, both served and unserved, at the present time is less than 10% of the total school population.

As part of the computer simulated decision-making study, it was of interest to ascertain what expectations were held by professionals for various handicapping conditions in children from five naturally-occurring groups (i.e., minority, low SES, high SES, boys, and girls). Also of interest was the extent to which such expectations were realistic when compared to actual incidence figures.

Procedure

A pretest measuring knowledge of assessment was administered to all participants prior to their engaging in the interactive terminal; five items designed to measure entry-level expectations for certain handicapping conditions were embedded in this pretest (see Appendix A-1 for a copy of the pretest questions).

Participants were asked, based on their own experiences, to indicate the percentage of children from several groups (i.e., minority, low SES, high SES, boys, girls) who might evidence various handicapping conditions (i.e., academic difficulties, behavior problems, emotional disturbance, learning disabilities, mental retardation, physical handicaps, sensory impairments, and speech and language difficulties).

Estimates of Handicapping Conditions in Groups of Children

Minority children. Mean estimates for various handicapping conditions in minority children made by various professionals are presented in Table 12.5. Estimates were extremely high for all disabilities, ranging from 28.8% for academic difficulty to 4.9 for physical handicaps. Estimates were somewhat more accurate for low incidence handicaps than for those with higher incidence (see Table 12.2 for incidence figures). Although estimates were high for all professionals, the school psychologists' estimates were slightly lower and generally were more consistent among themselves than were the other groups. School administrators' and regular educators' estimates for minority children were the highest.

Insert Table 12.5 about here

Low SES children. Professionals' estimates for various handicapping conditions in low SES children are presented in Table 12.6. Once again, these estimates were extremely high (range = 28.0% for academic difficulties to 4.8% for physical handicaps) and were quite similar to those made for minority children. Low incidence handicaps were estimated with greater accuracy by all groups of participants; additionally, school psychologists', special educators', and administrators' estimates were similar for this group of children. Regular educators' and other support personnels' estimates were also similar, but were higher than those of other professionals.

Insert Table 12.6 about here

High SES children. Overall estimates made for high SES children with regard to high incidence handicaps are presented in Table 12.7; these estimates were half as great as those made for low SES and minority children, ranging from 12.2% for behavior problems to 8.6% for emotional disturbance. Estimates for low incidence handicaps were approximately the same as for other categories. Regular educators made the highest estimates, while all other professionals' estimates were consistent across roles.

Insert Table 12.7 about here

Boys. Professionals' mean estimates for handicapping conditions in boys are presented in Table 12.8. These estimates were less than the estimates made for low SES and minority children, but were greater than those made for high SES children. Estimates ranged from 19.2% for academic difficulty to 4.2% for physical handicaps. School psychologists' overall estimates were lower, and therefore more accurate, than those of other professionals, particularly with regard to learning disabilities and physical handicaps.

Insert Table 12.8 about here

Girls. Mean estimates for various handicapping conditions found in girls are presented in Table 12.9. These estimates generally were lower than those for all other groups (range = 8.9% for behavior problems to 4.0% for physical handicaps). Professionals estimated that the percentage of girls who would have academic difficulties in

general would be similar to the percentage of high SES children with academic difficulties; however, all other estimates were lower than those for children in other categories (e.g., minority, low SES). Administrators were more accurate in their perceptions of high-incidence handicaps, but school psychologists' estimates for low-incidence handicaps were most accurate.

Insert Table 12.9 about here

Estimates for Various Handicapping Conditions

The estimates made by professionals in the computer-simulated decision-making study were also summarized in terms of their estimates for various handicapping conditions. These data are derived from Tables 12.5 - 12.9. Each handicap will be discussed separately. It should be noted, however, that the handicaps are not necessarily separate conditions; this fact may lead to estimates that are higher than would be the case if the handicaps were clearly distinct.

Academic difficulties. Academic difficulty was viewed by professionals as having the highest incidence in all groups. Minority ($\bar{X}$ = 28.8%) and low SES ($\bar{X}$ = 28.0%) children were seen by all professionals as having more academic difficulty than the other groups under investigation. Boys ($\bar{X}$ = 19.2%) also were perceived as having considerable difficulty in academics, while high SES children ($\bar{X}$ = 11.6) and girls ($\bar{X}$ = 11.2%) were thought to least often have academic problems.

Behavior problems. Professionals estimated that behavior problems would have the second highest incidence of those handicaps under inves-

tigation. Once again, minority ($\bar{X}$ = 22.2%) and low SES children ($\bar{X}$ = 22.1%) were viewed as having more behavior problems than children from other groups; however, estimates for behavior problems in boys ($\bar{X}$ = 18.0%) were also high. The incidence of high SES children's behavior problems was estimated at 12.2%, while estimates for such problems in girls was only 8.9%.

Emotional disturbance. Overall estimates for children with emotional disturbances (ED) were lower than those for both academic difficulties and behavior problems. Low SES children ($\bar{X}$ = 14.6%) were expected to evidence the most emotional disturbance, followed by minority children ($\bar{X}$ = 13.4%). Estimates for ED in boys ($\bar{X}$ = 9.2%) were somewhat lower, while high SES children ($\bar{X}$ = 8.6%) and girls ($\bar{X}$ = 7.0%) received the lowest estimates.

Learning disabilities. Professionals' estimates for learning disabilities were higher than estimates for emotional disturbance, but lower than those for academic difficulties and behavior problems. As was evidenced for other handicaps, low SES and minority children were perceived as having more learning disabilities than other groups (mean estimates were 16.2% and 17.4%, respectively). Boys ($\bar{X}$ = 13.4%) were also seen as evidencing a high rate of learning disabilities. On the other hand, high SES children ($\bar{X}$ = 8.7%) and girls ($\bar{X}$ = 7.1%) were seen as having the least problems in this area.

Mental retardation. Mean estimates for children having mental retardation were considerably lower than estimates for high incidence handicaps, ranged from 6.6% for low SES children to 4.0% for high SES children. Minority children were perceived as having a 6.1% incidence

of mental retardation, while estimated incidence for boys was 5.4%. Professionals' lowest expectations for mental retardation were for girls ($\bar{X}$ = 4.2%).

Physical handicaps. Professionals' mean estimates for children with physical handicaps were the lowest of all handicaps under investigation and were relatively consistent among the various groups of children. Minority ($\bar{X}$ = 4.9%) and low SES children ($\bar{X}$ = 4.8%) received the highest estimates; estimates for boys ($\bar{X}$ = 4.2%) were next in value, while girls ($\bar{X}$ = 4.0%) and high SES children ($\bar{X}$ = 3.8%) had the lowest estimated incidence for physical handicaps.

Sensory impairments. Estimates of the percentages of children evidencing sensory impairment were higher than for physical handicaps, but lower than for mental retardation. Minority and low SES children were perceived as having more sensory impairments than the other groups under investigation ($\bar{X}$ = 6.5% for both groups). Estimates for sensory impairment in girls ($\bar{X}$ = 4.8%) was next in value, followed by estimates for high SES children ($\bar{X}$ = 4.5%). Boys were perceived as having the lowest incidence of sensory impairment ($\bar{X}$ = 4.2%).

Speech and language difficulties. Once again, minority ($\bar{X}$ = 15.9%) and low SES children ($\bar{X}$ = 15.4%) were viewed by professionals as having the highest incidence of speech and language difficulties. Boys were estimated to have a 10.1% incidence rate in this area, and high SES children ($\bar{X}$ = 6.8%) and girls ($\bar{X}$ = 6.5%) were seen as having the lowest incidence of problems with speech and language.

Estimates as a Function of Professional Role

Every professional role represented in the study's participants

gave estimates for various handicaps and for different types of children that were far in excess of actual incidence figures. School psychologists' estimates, however, generally were closer to the actual incidence figures than those of professionals. Representative frequency distributions for school psychologists' estimates may be found in Appendix D-1. The estimates of administrators and regular educators most frequently were the least accurate.

Estimates as a Function of Knowledge of Assessment

As reported in Chapter 4, professionals with very high pretest knowledge of assessment appeared to have better performance on some aspects of the computer-simulated decision-making process. Individuals in this high-knowledge group, who were all school psychologists, also made the most accurate estimates of children's handicaps. Conversely, the most inaccurate estimates were made by the very low pretest knowledge group, in particular, school administrators with low pretest scores. Summary data on estimates as a function of knowledge of assessment and professional role are presented in Appendix D-2.

Summary

Participating school professionals, regardless of their role, estimated there to be many more handicapped children than are shown in actual national incidence figures. In fact, many estimates were as much as 13 times the actual incidence figures in certain categories. Highest estimates were consistently made for children of minorities and low socioeconomic status, while high socioeconomic status children and girls received the lowest estimates; estimates for various handicaps in boys were in the mid-range. Although estimates of all professionals

were far in excess of actual incidence figures, school psychologists' estimates were generally the most accurate.

Although results of this segment of the research indicated that professionals' expectations for the percentages of children evidencing various handicaps were unrealistically high when compared to actual incidence figures, an accurate sense of relative proportion was demonstrated. In other words, the relationships of the percentages of children found in high-incidence and low-incidence disabilities was consistently preserved across categories (e.g., minority, high SES, low SES, boys, and girls), regardless of the role of the estimator.

Estimates made for minority and low SES children were somewhat realistic in that children from these groups, in actuality are overrepresented in high-incidence special education classes. Similarly, children from high SES environments are less frequently found in special education classes for mild or moderate disabilities; consequently, professionals appear to have some appropriate sense of the actual proportions for these groups.

The ratio of males to females in special education classes for high-incidence handicaps is reported to be in the range of 3:1 to 9:1 (Reinert, 1976). These ratios are also consistent with estimated proportions given by professionals in the study.

One plausible explanation for the obtained results may lie in the fact that there are a limited number of slots available in classes for the handicapped. As a result, many children in need of service may not

be accounted for in reported incidence figures. On the other hand, professionals have expressed concern over the high rates of referral for assessment of children with potential handicaps. Data from the present study are supportive of the contention that high rates of referral may in part be a function of professionals' high expectations for the number of handicapped children in schools.

Chapter 13

Efficacy of Simulation

Computer simulation activities have been used extensively in fields such as medicine, business, corporate management, and science to foster more effective and efficient decision making, to advance understanding of the current functioning of an operation or system under study, to analyze the interrelationships of the subunits within a given operation, to test various decision-making rules, and to provide an objective and systematic method of hypothesis testing and data collection in fields that are vulnerable to subjective decision-making processes. The value of computers and simulations has been demonstrated time and again in the aforementioned professions. Yet, the use of computers and computer simulation to study the diagnostic/decision-making process in education is a fairly recent advancement.

A simulation is not the real thing, nor should the investigator or researcher expect the model to mirror it. Dutton and Briggs (1971) indicated that "researchers must not try to make the simulation look like the real thing because if the simulation is as complicated as the real process it represents, it will be no more comprehensible than the real process (p. 103)." Thus the purpose of any simulation should be to duplicate only the essential characteristics of the system in question.

Simulation activities provide an excellent means of inquiry when the relations between variables appear nonlinear, when a system has interacting systems, when conditional responses exist, when an explora-

tory approach to solutions is clearly desired, when time and financial resources are limiting factors, and when full-scale experiments addressing systems that directly or indirectly affect human beings may be deemed unfeasible on social, political, or experimental control grounds.

With the previous discussion in mind, the value of using computer simulation in the study of the diagnostic/decision-making process in education becomes self evident. Very little has been known about the specific ways in which assessment data have been used to make psychoeducational decisions about learning disabled children. In addition, little information exists concerning the kinds of data that are actually used and the non-objective factors that affect psychoeducational decision making. Finally, little information exists that addresses the efficacy of simulation to investigate the psychoeducational decision-making process.

This chapter focuses on four questions asked of each subject following completion of the simulation activity. The purpose of the questions was to evaluate the extent to which computer simulated decision making was perceived as representative of "real life" decision making by individuals who participated in the investigation.

Procedure

After reviewing the case folder and accessing the desired assessment information, each subject answered a series of questions; the results of analyses of these items have been discussed in previous chapters. Additionally, each subject was asked to provide narrative responses to the following four questions which addressed selected aspects of computer simulation:

1. How did this computer simulation differ from real-life placement decision processes?
2. Did you believe you had enough time to complete this activity?
3. Did you find any specific type of information more useful than others in arriving at your decision?
4. What kinds of information in addition to those provided by the program would be helpful to you in making your decision?

The narrative nature of the responses provided by each subject to the four questions following the completion of the computer-simulated diagnostic decision-making program limited analysis of the results to a descriptive level. Responses to each of the four questions were sorted into categories that approximated like or similar concerns. Data were available for 223 subjects.

Simulation vs. Real-Life

Responses to the first question, which addressed the way(s) in which this computer simulation differed from real-life educational decision processes, indicated that subjects did perceive the simulation as differing from real-life placement decision practices in several ways: (a) there was no opportunity to interact with other team members and/or the child being assessed (N = 103); (b) there was no means of communicating with the parents of the child (N = 61); (c) a broader spectrum of assessment information was available than in the real-life situation (N = 40); and (d) the simulation was much more objective than the real-life decision-making process due to factors such as the absence of subjective interpretation and team discussion (N = 9). Ten subjects indicated that no discernible differences were observed be-

tween the simulation and the real-life placement decision process.

Those factors identified as differing from the real-life placement decision process focused primarily on the absence of opportunities to interact with other diagnostic personnel, parents, and the child (N = 164). A very small number of subjects identified the quality and/or quantity of assessment information available for review as a factor differing from real-life placement practices.

Simulation Time

The second issue addressed the extent to which subjects believed they had sufficient time to complete the simulation activity. Of the 223 subjects, 156 individuals indicated that they had sufficient time. The remaining 67 subjects stated that the 25 minute assessment period was insufficient to complete the simulation activity.

Useful Information

Next, subjects were asked to recall whether they had found any specific type of information more useful than other information in arriving at their decisions. There was considerable variation in the responses to this question. Assessment data identified as significant and useful in the decision-making process were as diverse as the assessment information collected by individual subjects. When a comparison was made of the factors that subjects identified as influencing their decisions during the decision-making phase of the simulation with their responses to the post simulation question, it was discovered that some subjects (N = 54) identified different factors as influencing their decisions on the two occasions. A complete review of those factors perceived as influencing decisions during the simulation was presented

in Chapter 11.

Needed Information

Finally, subjects were asked to indicate what kinds of information, in addition to those provided by the program, would be helpful in making their decisions. Responses were comparable to those factors identified as ways in which computer simulation differed from real-life placement decision processes (i.e., question one). Interview and direct experience with the child, interview with teacher(s) and parent(s), and prior school history (cumulative record) were perceived as information that would have been helpful in making decisions.

Summary

Results of the post simulation inquiry clearly showed that most of the individuals who participated in the simulation believed that the activity differed from real-life placement decision practices in some way. Although 213 subjects identified factors that were different from real-life placement decision practices, 88% (N = 196) of those who participated in the simulation did not perceive the overall assessment and decision-making process as differing significantly from real-life practices.

Prior to this investigation, little information existed concerning the kinds of data that are actually used and the non-objective factors that affect psychoeducational decision making. In addition, little information existed that addressed the efficacy of computer simulation to investigate the psychoeducational decision-making process.

The use of computers and computer simulation to study the diagnostic/decision-making process in education is still a fairly recent advance-

ment. However, the application of computer simulation to the psycho-educational assessment and decision-making process in this study has provided invaluable data and insight into a very critical component of the educational process. Further utilization and refinements of simulation activities in the study of assessment and decision-making practices should advance our understanding of this process even more.

Chapter 14

Summary

Nationally, more than 250 million standardized tests are administered each year to the more than 44 million students who attend school. Test results are intended to be useful; they are supposed to provide information that will help both parents and educators make important decisions for and about children. While many tests are administered routinely for the purpose of monitoring pupils' progress in mainstream educational programs, very many tests are administered as a regular part of the process of making decisions about handicapped or potentially handicapped students.

Prior to enactment of Public Law 94-142, Congress expressed concern with widespread abuse in assessment. Two quotes from the Senate Record highlight the concern.

> The Committee is deeply concerned about practices and procedures which result in classifying children as having handicapping conditions when, in fact, they do not have such conditions....At least three major issues are of concern with respect to problems of identification and classification: (1) the misuse of appropriate identification and classification data within the educational process itself; (2) discriminatory treatment as the result of the identification of a handicapping condition; and (3) misuse of identification procedures or methods which results in erroneous classification of a child as having a handicapping condition (Senate, Report No. 94-168, Education for All Handicapped Children Act, June 2, 1975, p. 26-29).

> The Committee is alarmed about the abuses which occur in the testing and evaluation of children, and is concerned that expertise in the proper use of testing and evaluation procedures falls far short of the prolific use and development of testing and evaluation tools. The usefulness and mechanistic ease of testing should not become so paramount in the educational process that the negative effects of such testing are overlooked (Senate, Report No. 94-168, Education for All Handicapped Children Act, June 2, 1975, pp. 26-29).

Congress included in PL 94-142 a set of "Protection in Evaluation Procedures" provisions, provisions that if implemented were to facilitate fair assessment and decision making. Ysseldyke (1979) and Duffey, Salvia, Tucker, and Ysseldyke (in press) chronicled the interesting and essentially futile ways in which SEAs and the educators and psychologists employed in those units, have addressed the assessment and decision-making provisions of PL 94-142. Essentially, decision makers have blamed tests for their problems, and have sought to identify or develop fair tests for use in decision making. As repeatedly observed (Algozzine & Ysseldyke, 1979; Bersoff, 1973; Bersoff & Ysseldyke, 1977; Foster & Ysseldyke, 1976; Salvia & Ysseldyke, 1978; Ysseldyke, 1973, 1978, 1979; Ysseldyke & Mirkin, in press; Ysseldyke & Shinn, in press), the search for "fair" tests will not solve major problems in the assessment and decision-making process.

Major questions arise as we look at current assessment and decision making practices and at the kinds of training decision makers currently

receive. Among the major questions are at least the following:

- What tests are used most frequently in the process of making psychoeducational decisions about handicapped or potentially handicapped students?
- To what extent do the assessment devices used most commonly meet accepted standards for technical adequacy?
- To what extent do decision makers refer to technical manuals before using an assessment device?
- To what extent do decision makers rely on both quantitative and qualitative information in making decisions about pupils?
- How often do decision makers declare normal students eligible for special education services, and by what name do they call them (i.e., how do they classify them)?
- To what extent are the assessment process and decision-making outcomes influenced by naturally-occurring pupil characteristics such as sex, SES, and physical appearance?
- To what extent are decision makers influenced by what teachers tell them about a student and the nature of his/her problems?
- What expectations do decision makes hold regarding the number of students who are handicapped, do these expectations differ as a function of naturally-occurring pupil characteristics, and do expectations influence outcomes?

- To what extent does decision making vary as a function of one's professional role and knowledge about assessment?

While the above questions can be studied in the naturalistic environment of the placement team meeting (Applied Management Sciences, 1979; Yoshida, Fenton, Maxwell & Kaufman, 1978), investigators using observational methodology have no control over the information decision makers receive.

We developed a computer-simulated decision making program that would enable us to investigate professional decision making while still controlling several of the parameters. By using this methodology, we were able to address critical issues in current psychoeducational decision making.

Method

Two hundred and twenty-four professionals from public and private schools in Minnesota participated in the computer-simulated decision making. The professional roles represented in the subject sample included regular education teachers, special education teachers, administrators, school psychologists, and other support personnel.

The computer simulation program initially collect demographic data on the participants and assessed their knowledge base in assessment and their estimates of the incidence of various handicapping conditions. Referral information for one of 16 "cases" was then provided and subjects were instructed that they were to make classification and placement decisions for the child. They were told that scores and other information were available to them on a variety of tests from among seven domains.

Participants indicated domains in which they wanted information and then selected specific tests for which they wanted performance scores, technical information, and/or qualitative performance data. All information was stored in three separate retrieval archives and was available to all participants throughout the diagnostic simulation. All performance data were within the average range for a pupil of the referral age. Participants were allowed to continue selecting domains and specific information until they indicated they were ready to make their decisions; a series of outcome questions, dealing with eligibility, classification, prognosis, and placement, was then presented. Then, after the subjects indicated the extent of influence various factors had on their decisions, they were asked to respond to questions on the efficacy of the computer-simulation approach to the study of psychoeducational decision making.

Results

Results are reported separately for each of the major aspects of current decision-making practice addressed.

Frequency of Test Usage

Professionals used from one to 11 tests in making decisions about the referred student. The most frequently used tests were achievement and intelligence tests, and this did not differ as a function of the reason the student was referred. The most frequently administered tests were the WISC-R (used by 69% of the professionals) and the Bender Visual-Motor Gestalt Test (used by 49% of the professionals). Test usage was essentially similar across professional roles, although psychologists

used the Stanford Binet significantly less often than other professionals, and used behavioral recordings and projectives significantly more often than other professional groups.

Technical Adequacy of the Tests Used

The psychometric characteristics of the assessment devices available for selection were quite varied; their technical adequacy along three dimensions (i.e., norms, reliability, validity) was of interest and was evaluated. First, tests that did not include necessary or appropriate psychometric information in their manuals were judged technically inadequate. Second, criteria specified in Salvia and Ysseldyke (1978), Ysseldyke (1978), and the APA Standards (1972) were used to judge the technical qualities of each of the other devices. Twenty-four percent (i.e., 12 of 49) of the devices were rated as having technically adequate norms and/or validity; 65 percent of the devices were rated as having inadequate norms; 59 percent as having inadequate reliability, and 67 percent as having inadequate validity.

With respect to norms, 73 percent of the 159 devices that were selected as the first option (i.e., the device was selected first) were considered to be technically adequate; however, during the fourth selection, 74 percent of 144 devices selected were considered to be inadequate. In other words, professionals appeared to select adequate tests in the earlier selection, but as they continued to examine additional instruments, they chose devices that were inadequate. Results were similar with respect to reliability and validity, although differences were not so dramatic: the highest percent of devices selected that were technically adequate with respect to reliability was 58 percent, while

tests with adequate validity represented only 55 percent of the devices selected on the first run. The trend toward selection of more technically inadequate devices on subsequent runs remained consistent for all technical characteristics.

Use of Technical Manuals

General use of technical manuals was low; the number of professionals requesting technical information ranged from 52% (for behavior recordings) to 81% (for measures of adaptive behavior). Use of technical information varied as a function of referral information. Manuals were accessed significantly more often when the student was referred for behavior problems than when he/she was referred for academic problems. Regular educators used test manuals most often, while school psychologists and school administrators were the least likely groups to access test manuals.

Manual usage also varied as a function of knowledge about assessment. Those who earned high scores on the pretest seldom requested technical information.

Use of Qualitative Information

A total of 1014 tests was used by the 159 professionals. Qualitative information was requested 704 times (69% of the time). The number of requests for qualitative information was similar among all groups of professionals and levels of pretest knowledge. Requests for qualitative information did not vary as a function of naturally-occurring pupil characteristics.

Eligibility Decisions

All assessment data indicated pupil performance within the normal or average range. Yet, 51% of the decision makers declared the normal

student eligible for special education services! Pupils' naturally-occurring characteristics had no influence on the eligibility decision, per se. In each of the 16 conditions, the student was declared eligible by at least 40% of the professionals.

Declaration of eligibility did differ as a function of professional role. Administrators were least likely to declare the student eligible, regular educators were the most likely. In one condition, 60% of the regular educators said the student was eligible for special education services. Knowledge of assessment, as ascertained by the pretest score, had no influence on eligibility declarations. Individuals who earned very low scores (0-6) as well as those who earned very high scores (21-25) declared the student eligible 57% of the time.

Classification Decisions

Participants were asked to indicate on a 5-point scale the likelihood that the student was LD, ED, and MR. Of those who declared the student eligible for service, 68 percent rated the student as likely or very likely LD, 27 percent said the pupil was likely or very likely ED, while 4 percent rated the student as likely or very likely MR. In all but three experimental conditions, when the pupil was classified, the most commonly used classification was LD. The three exceptions were three of the eight experimental conditions in which the student was referred for a behavior problem. In these conditions, the child was classified ED as often as LD.

To our surprise, there were 22 instances in which a professional said the student was ineligible for services, but said the student was likely or very likely ED, LD, or MR. There was some variability in

the degree to which different professionals were willing to classify students. The various professionals were fairly consistent in their estimation of the student as being mentally retarded; that is, 82 to 97 percent of the participants indicated that the student was not mentally retarded. As a group, school psychologists were the most definite in their rejection of the possibility of mental retardation.

With one exception, classification of emotional disturbance was fairly consistent. From 14 to 17 percent of all professionals, except regular educators, indicated that the student was likely to emotionally disturbed. The student was classified as emotionally disturbed by 34 percent of the regular educators.

The largest amount of variability was apparent in the category of learning disabilities. The percentage of professionals indicating the student whose case they had reviewed was learning disabled was 47, 50, 25, 40, and 74 for school psychologists, special educators, administrators, regular educators, and support personnel, respectively. Support personnel were by far the most likely to say that the student was likely to be learning disabled (mean rating 2.2). School administrators were the least likely to classify the student as either learning disabled or emotionally disturbed, although they were the most likely in relation to other role categories, to call the student mentally retarded.

Knowledge of assessment, as ascertained by the pretest score, was unrelated to the making of classification decisions.

Placement Decisions

Participants were asked to identify, in rank order, the placements they would recommend for the student on whom they gathered assessment

data. Regardless of the case they reviewed, the most frequently recommended placements were regular class with resource teacher consultation and part-time resource room. There were no differences in the placements recommended by different professional groups or by people who performed at different levels on the pretests.

Factors Influencing Decisions

Participants reported that of all the test information available, the most influential data were from intelligence tests, achievement tests, and indices of the disparity between the two. This was true for all referral conditions. Differential importance was ascribed to personality tests and behavioral recording data. These were seen as more influential when students were referred for behavior problems than when they were referred for academic problems.

Expectations

Participants were asked prior to participation in this study to identify the percentage of students representative of various demographic groups who fit selected categorical groups (e.g., what percentage of low SES children are mentally retarded?). These data were gathered to ascertain the extent to which outcome decisions were influenced by preconceived notions about the makeup of categorical groups. While all decision makers held unrealistically high expectations for the numbers of students who are handicapped, and some differential expectations for different groups of students, the high expectancies did not influence outcome decisions.

Efficacy

Subjects were asked to indicate the extent to which the simulation

approximated "real life" decision making. Eighty-one percent of the participants indicated that the simulation did approximate their activities in everyday decision making.

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Footnotes

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[1]Portions of this chapter appear in "Psychoeducational assessment and diagnostic simulation" by B. Algozzine, K. Poulton, J. Sutherland, and J. E. Ysseldyke, in Clinical Applications of Computers in Mental Health and Mental Retardation (in press).

[2]All Appendices referred to in this report are printed in J. E. Ysseldyke, B. Algozzine, R. R. Regan, M. Potter, & L. Richey, Technical Supplement for Computer-Simulated Investigations of the Psychoeducational Assessment and Decision-Making Process (Research Report No. 34). Minneapolis: University of Minnesota, Institute for Research on Learning Disabilities, 1980b.

Table 3.1

Educational Background of Subjects

Degree	Number of Subjects	Percent of Total
BS	85	54
MA	41	26
MA + 15	7	4
MA + 30	16	10
PHD	10	6

Table 3.2

Selected Demographic Characteristics of Participating Subjects

Current Position		Age	Years of Regular Class Experience	Years of Special Class Experience	Years of Non-Teaching Experience	Number of Special Education Courses	Number of Statistics Courses	Number of Assessment Courses	Number of Graduate Courses
School Psychologist	$\bar{X}$	36.6	1.3	0.2	8.0	7.9	3.4	5.3	5.4
	s	8.2	2.6	0.7	4.8	7.4	2.0	2.3	8.1
Special Ed. Teacher	$\bar{X}$	40.3	5.2	7.2	0.9	13.9	1.1	2.1	10.7
	s	9.1	7.3	4.4	2.1	5.8	1.1	1.4	7.6
Administrator	$\bar{X}$	41.6	6.4	2.8	9.9	9.3	1.7	1.9	6.8
	s	9.4	5.1	3.8	8.4	11.3	1.0	2.0	10.8
Regular Ed. Teacher	$\bar{X}$	39.8	13.7	2.2	0.5	3.4	1.0	1.2	14.8
	s	10.4	7.9	5.1	2.4	6.6	2.8	1.6	11.5
Others	$\bar{X}$	42.8	4.5	2.6	7.1	4.9	0.8	1.2	8.4
	s	8.1	5.1	4.9	6.3	5.4	0.8	1.1	8.5

Note: $\bar{X}$ = mean, s = standard deviation

Table 4.1

Ranking of Devices According to Use

Rank	Name of Device	Freq
1	Wechsler Intelligence Scale for Children-Revised (WISC-R)	110
2	Bender Visual-Motor Gestalt Test (BGMVT)	78
3	Peterson-Quay Behavior Problem Checklist (PQBPC)	59
4	Frequency Counting or Event Sampling (FCER)	54
5	Stanford-Binet Intelligence Scale (SBIS)	53
6	Piers-Harris Self-Concept Scale (PHCSCS)	51
7	Illinois Test of Psycholinguistic Abilities (ITPA)	42
8	Peabody Individual Achievement Test (PIAT)	38
9	Wide Range Achievement Test (WRAT)	38
10	Key Math Diagnostic Arithmetic Test (KMDAT)	35
11	Auditory Discrimination Test (ADT)	34
12	Iowa Test of Basic Skills (ITBS)	34
13	Woodcock Reading Mastery Test (WRMT)	30
14	Vineland Social Maturity Scale (VSMS)	26
15	AAMD Adaptive Behavior Scale-Public School Version (ABSPSV)	24
16	California Achievement Test (CAT)	21
17	School Apperception Method (SAM)	19
18	Stanford Achievement Test (SAT)	19
19	Developmental Test of Visual Perception (DTVP)	18
20	Rorschach-Inkblot Technique (RIBT)	16
21	Developmental Test of Visual Motor Integration (DTVMI)	16
22	Peabody Picture Vocabulary Test (PPVT)	16
23	Stanford Diagnostic Reading Test (SDRT)	16
24	Durrell Analysis of Reading Difficulties (DARD)	14
25	Purdue Perceptual-Motor Survey (PPMS)	14
26	Thematic Apperception Test (TAT)	14
27	Interval or Time Samplings (ITY)	13
28	Otis-Lennon Mental Ability Test (OLMAT)	13
29	Permanent Products (PPR)	13
30	Gates-McGinitie Reading Test (GMRT)	10
31	Slosson Intelligence Test (SIT)	9
32	AAMD Adaptive Behavior Scale (ABS)	8
33	Metropolitan Achievement Test (MAT)	8
34	Memory for Designs Test (MFDT)	7
35	Diagnostic Reading Scales (DRS)	6
36	Northwestern Syntax Screening Test (NSST)	6
37	Gates-McKillop Reading Diagnostic Tests (GMRDT)	5
38	Quick Test (QKT)	4
39	Stanford Diagnostic Mathematics Test (SDMT)	4
40	Goldman-Fristoe Test of Articulation (GFTA)	3
41	Gray Oral Reading Test (GORT)	3
42	Gilmore Oral Reading Test (GORLT)	2
43	Goodenough-Harris Drawing Test (GHDT)	2
44	Diagnosis: An Instrumental Aid in Math (DIAM)	1
45	Full Range Picture Vocabulary Test (FRPVT)	1
46	Henmon-Nelson Tests of Mental Ability (HNTMA)	1
47	McCarthy Scales of Children's Abilities (MSCA)	1
48	Primary Mental Abilities (PMAT)	1
49	Kuhlman-Anderson Intelligence Test (KAIT)	0

Note: Repeated use of some devices is tabulated in this count.

Table 4.2

Use of Tests from Various Domains

Domain	Number of Selections (Use) None	One	Two	Three	Four	Five
Intelligence	9	104	35	9	2	0
	5%	67%	21%	6%	1%	0%
Achievement	13	58	49	27	10	2
	9%	38%	29%	17%	6%	1%
Perceptual-Motor	61	73	18	5	2	0
	39%	46%	11%	3%	1%	0%
Language	84	65	10	0	0	0
	53%	41%	6%	0%	0%	0%
Adaptive Behavior	107	52	0	0	0	0
	69%	31%	0%	0%	0%	0%
Behavior Ratings	53	77	25	3	1	0
	33%	49%	15%	2%	1%	0%
Personality	70	73	13	2	1	0
	44%	45%	9%	1%	1%	0%

Note: Different numbers of devices were avilable in all domains.
Upper value is number of participants.
Lower value is relative percentage of total number of participants (n=159).

Table 4.3

Technical Adequacy of Devices Available in

Computer Simulation Study

Test	Norms	Reliability	Validity
Intelligence Tests			
Stanford Binet	+	-	-
WISC-R	+	+	+
Slosson	-	-	-
McCarthy Scales of Children's Abilities	+	+	+
Full Range Picture Vocabulary Test	-	-	-
Quick Test	-	-	-
Peabody Picture Vocabulary Test	-	+	+
Goodenough-Harris Drawing Test	-	-	-
Henmon-Nelson Tests of Mental Ability	-	-	-
Kuhlmann-Anderson Intelligence Tests	+	+	+
Otis-Lennon Mental Ability Test	+	+	+
Primary Mental Abilities Test	-	+	+
Achievement Tests			
California Achievement Test	-	+	-
Iowa Test of Basic Skills	+	-	-
Metropolitan Achievement Test	-	+	-
Stanford Achievement Test	+	+	+
Gates-McGinitie Reading Tests	-	+	-
Peabody Individual Achievement Tests	+	+	+
Wide Range Achievement Test	-	+	-
Gray Oral Reading Test	-	-	-
Gilmore Oral Reading Test	-	-	-
Gates-McKillop Reading Diagnostic Tests	-	-	-
Durrell Analyses of Reading Difficulty	-	-	-
Stanford Diagnostic Reading Test	+	+	+
Diagnostic Reading Scales	-	-	-
Woodcock Reading Mastery Test	+	+	+
Key Math Diagnostic Arithmetic Test	-	-	-
Stanford Diagnostic Mathematics Test	+	+	+
Diagnosis: An Instructional Aid in Math	CR	CR	CR
Perceptual-Motor Tests			
Bender Visual-Motor Gestalt	-	-	-
Developmental Test of Visual Perception	-	-	-
Memory for Designs Test	-	-	-
Developmental Test of Visual-Motor Integration	-	-	-
Purdue Perceptual-Motor Survey	-	-	-
Behavioral Recordings			
Frequency Counting or Event Recording	SC	SC	SC
Interval or Time Samplings	SC	SC	SC
Permanent Products	SC	SC	SC
Peterson-Quay Behavior Problem Checklist	-	-	-
Personality Tests			
Piers-Harris Self-Concept Scale	-	-	-
Rorschach-Inkblot Technique	-	-	-
School Apperception Method	-	-	-
Thematic Apperception Test	-	-	-
Adaptive Behavior Scales			
AAMD Adaptive Behavior Scale	-	-	-
AAMD Adaptive Behavior Scale (School Version)	+	-	-
Vineland Social Maturity Scale	-	-	-
Language Tests			
Goldman-Fristoe Test of Articulation	CR	+	+
Auditory Discrimination Test	-	-	-
Northwestern Syntax Screening Test	-	-	-
Illinois Test of Psycholinguistic Abilities	-	-	-

Note: Criterion-referenced (CR) tests and those with special conditions (SC) are indicated.

Table 4.4

Frequency of Use of Devices According to Selected Technical Characteristics

NORMS

Order of Selection	Adequate		Inadequate		Other		Total Devices Selected
(1)	122	(.77)	22	(.14)	15	(.09)	159
(2)	72	(.46)	75	(.48)	8	(.05)	155
(3)	50	(.33)	90	(.60)	11	(.07)	151
(4)	25	(.17)	106	(.74)	13	(.09)	144
(5)	21	(.16)	98	(.76)	11	(.08)	129
(6)	19	(.17)	80	(.73)	11	(.10)	110
(7)	18	(.23)	52	(.67)	8	(.10)	78
(8)	7	(.14)	35	(.72)	7	(.14)	49
(9)	5	(.22)	17	(.74)	1	(.04)	23
(10)	1	(.11)	8	(.89)	0	(.00)	9
(11)	1	(.33)	2	(.67)	0	(.00)	3
	12	(.245)*	32	(.658)*	5	(.102)*	

*These figures represent the number of the 49 devices available during the simulated diagnostic session. Numbers in parentheses indicate proportion of the total available per order of selection.

Note: Total number of subjects is N = 159

Table 4.5

Frequency of Use of Devices According to Selected Technical Characteristics

RELIABILITY

Order of Selection	Adequate	Inadequate	Other	Total Devices Selected
(1)	92 (.58)	52 (.33)	15 (.09)	159
(2)	89 (.57)	58 (.38)	8 (.05)	155
(3)	61 (.40)	79 (.52)	11 (.07)	151
(4)	33 (.23)	99 (.69)	12 (.08)	144
(5)	17 (.13)	102 (.79)	10 (.08)	129
(6)	14 (.13)	86 (.78)	10 (.09)	110
(7)	11 (.14)	59 (.76)	8 (.10)	78
(8)	6 (.12)	37 (.76)	6 (.12)	49
(9)	3 (.13)	19 (.83)	1 (.04)	23
(10)	0 (.00)	2 (.67)	0 (.00)	3
	16 (.327)*	29 (.592)*	4 (.082)*	

*These figures represent the number of the 49 devices available during the simulated diagnostic session. Numbers in parentheses indicate proportion of the total available per order of selection.

Note: Total number of subjects is N = 159

Table 4.6

Frequency of Use of Devices According to Selected Technical Characteristics

VALIDITY

Order of Selection	Adequate	Inadequate	Other	Total Devices Selected
(1)	87 (.55)	57 (.36)	15 (.09)	159
(2)	60 (.39)	87 (.56)	8 (.05)	155
(3)	39 (.26)	101 (.67)	11 (.07)	151
(4)	22 (.15)	110 (.76)	12 (.08)	144
(5)	12 (.09)	107 (.82)	10 (.09)	129
(6)	11 (.10)	89 (.81)	10 (.09)	110
(7)	10 (.13)	60 (.77)	8 (.10)	78
(8)	6 (.12)	37 (.76)	6 (.12)	49
(9)	3 (.13)	19 (.83)	1 (.04)	23
(10)	0 (.00)	9 (1.00)	0 (.00)	9
(11)	1 (.33)	2 (.67)	0 (.00)	3
	12 (.245)*	33 (.673)*	4 (.082)*	

*These figures represent the number of the 49 devices available during the simulated diagnostic session. Numbers in parentheses indicate proportion of the total available per order of selection.

Note: Total number of subjects is N = 159

Table 4.7

Tests Used by Professionals in Seven Domains for Sixteen Referral Conditions

	Intelligence		Achievement		Perceptual Motor		Adaptive Behavior Scales		Behavioral Recordings		Language		Personality		Total
1	14	.24	19	.33	6	.11	0	.00	6	.11	8	.14	4	.07	57
2	15	.23	17	.26	13	.20	4	.06	7	.11	5	.08	4	.06	65
3	11	.16	18	.26	5	.07	3	.04	12	.18	4	.06	16	.23	69
4	10	.17	13	.22	5	.09	2	.04	14	.24	4	.07	10	.17	58
5	15	.25	13	.21	7	.12	5	.08	7	.12	6	.10	7	.12	60
6	16	.24	19	.28	9	.13	2	.03	11	.17	3	.05	7	.10	67
7	9	.13	15	.22	10	.14	6	.09	14	.20	7	.10	8	.12	69
8	16	.26	16	.26	7	.11	3	.05	9	.15	4	.06	7	.11	62
9	17	.25	19	.27	12	.18	5	.07	5	.07	5	.07	6	.09	69
10	14	.23	20	.33	10	.17	5	.08	4	.07	1	.02	6	.10	60
11	14	.22	12	.18	5	.08	4	.06	16	.25	4	.06	10	.15	65
12	10	.18	18	.33	8	.15	3	.05	7	.13	4	.07	5	.09	55
13	13	.24	19	.35	7	.13	2	.03	3	.06	7	.13	3	.06	54
14	15	.22	23	.34	14	.21	3	.04	4	.06	6	.09	3	.04	68
15	11	.18	24	.39	5	.08	3	.05	10	.16	5	.08	4	.06	62
16	10	.14	21	.28	8	.11	3	.04	14	.19	8	.11	10	.14	74
Total	210		286		131		53		143		81		110		1014

Table 4.8

Usage of Various Devices by School Personnel

Device	Number of Times Used	Used by School Psychologists	Used by Special Educators	Used by School Administrators	Used by Regular Educators	Used by Other Personnel
CAT	20	1 (4)	7 (14)	2 (12)	9 (17)	1 (7)
ITBS	33	2 (8)	8 (16)	3 (18)	14 (27)	6 (40)
MAT	8	0 (0)	2 (4)	1 (6)	4 (8)	1 (7)
SAT	19	2 (3)	7 (14)	2 (12)	8 (15)	0 (0)
GMRT	10	2 (8)	3 (6)	1 (6)	3 (6)	1 (7)
PIAT	38	7 (28)	18 (36)	8 (47)	2 (4)	3 (20)
WRAT	38	9 (36)	18 (36)	3 (18)	5 (10)	3 (20)
GORT	3	0 (0)	3 (6)	0 (0)	0 (0)	0 (0)
GORLT	2	0 (0)	2 (4)	0 (0)	0 (0)	0 (0)
GMRDT	5	0 (0)	1 (2)	1 (6)	2 (4)	1 (7)
DARD	14	1 (4)	7 (14)	1 (6)	1 (2)	4 (27)
SDRT	15	1 (4)	7 (14)	1 (6)	5 (10)	1 (7)
DRS	6	1 (4)	3 (6)	1 (6)	1 (2)	0 (0)
WRMT	29	8 (32)	15 (30)	2 (12)	2 (4)	2 (13)
KMDAT	35	9 (36)	16 (32)	3 (18)	6 (12)	1 (7)
SDMT	4	0 (0)	2 (4)	0 (0)	1 (2)	1 (7)
DIAM	1	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)
SBIS	53	2 (8)	16 (32)	6 (35)	27 (52)	2 (13)
WISCR	107	23 (92)	41 (82)	14 (82)	17 (33)	12 (80)
SIT	9	1 (4)	2 (4)	1 (6)	4 (8)	1 (7)
MSCA	1	1 (4)	0 (0)	0 (0)	0 (0)	0 (0)
FRPVT	1	0 (0)	0 (0)	0 (0)	0 (0)	1 (7)
QKT	4	1 (4)	0 (0)	1 (0)	1 (2)	1 (7)
PPVT	16	3 (12)	5 (10)	3 (18)	4 (8)	1 (7)
GHDT	2	1 (4)	0 (0)	0 (0)	1 (2)	0 (0)
HNTHA	1	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)
KAIT	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
OLMAT	12	0 (0)	0 (0)	0 (0)	12 (23)	0 (0)
PMAT	1	0 (0)	0 (0)	0 (0)	0 (0)	1 (7)
BVMGT	74	14 (58)	19 (38)	9 (53)	21 (40)	8 (53)
DTVP	18	0 (0)	7 (14)	2 (12)	9 (17)	0 (0)
MFDT	6	1 (4)	2 (4)	0 (0)	2 (4)	1 (7)
DTVMI	16	2 (8)	6 (12)	3 (18)	5 (10)	0 (0)
PPMS	14	0 (0)	5 (10)	3 (18)	5 (10)	1 (7)
GFTA	3	9 (0)	2 (4)	0 (0)	1 (2)	0 (0)
ADT	33	2 (8)	10 (20)	6 (35)	9 (17)	6 (40)
NSST	6	0 (0)	3 (6)	2 (12)	1 (2)	0 (0)
ITPA	42	6 (24)	24 (48)	2 (12)	6 (12)	4 (27)
ABS	8	1 (4)	2 (4)	0 (0)	3 (6)	2 (13)
ABSPS	24	2 (8)	4 (8)	3 (18)	11 (21)	4 (27)
VSMS	18	2 (8)	8 (16)	1 (6)	7 (14)	0 (0)
PCER	54	13 (52)	14 (28)	4 (24)	17 (33)	6 (40)
ITY	13	3 (12)	2 (4)	2 (12)	3 (6)	3 (20)
PPR	13	5 (20)	3 (6)	3 (18)	1 (2)	1 (7)
PQBPC	59	10 (40)	17 (20)	5 (29)	23 (44)	4 (27)
PRCSCS	60	9 (36)	20 (40)	2 (12)	24 (46)	5 (33)
RIBT	16	5 (20)	3 (6)	1 (6)	3 (6)	4 (27)
SAM	19	5 (20)	2 (4)	2 (12)	8 (15)	2 (18)
TAT	16	9 (36)	2 (4)	1 (6)	3 (6)	1 (7)
		n = 25	n = 50	n = 17	n = 52	n = 15

Note: See Appendix A-3 for exact title of each device
( ) percent of group members to use device.

Table 4.9

Pretest Score Distribution

Obtained Score	Number of Subjects Receiving Score	Percentage of Subjects Receiving Score
0	1	0.6
6	5	3.1
7	8	5.0
8	12	7.5
9	10	6.3
10	15	9.4
11	17	10.7
12	16	10.1
13	12	7.5
14	12	7.5
15	10	6.3
16	10	6.3
17	4	2.5
18	6	3.8
19	4	2.5
20	2	1.3
21	5	3.1
22	4	2.5
23	5	3.1
24	1	0.6

Note: Possible score range was 0-25.

Table 4.10

Test Use Grouped by Assessment Knowledge-Based Categories

Device	Number of Times Used	Very Low (6-10)	Low (11-15)	High (16-20)	Very High (21-25)
CAT	20	5 (10)	12 (18)	2 (8)	1 (7)
ITBS	33	13 (26)	14 (21)	4 (15)	2 (13)
MAT	8	5 (10)	2 (3)	1 (4)	0 (0)
SAT	19	5 (10)	10 (15)	3 (12)	1 (7)
GMRT	10	3 (6)	8 (8)	0 (0)	2 (1)
PIAT	38	9 (18)	14 (21)	10 (39)	5 (33)
WRAT	38	7 (14)	19 (28)	7 (21)	5 (33)
GORT	3	3 (6)	0 (0)	0 (0)	0 (0)
GORLT	2	2 (4)	0 (0)	0 (0)	0 (0)
GMRDT	5	1 (2)	2 (3)	2 (8)	0 (0)
DARD	14	3 (6)	8 (9)	5 (19)	0 (0)
SDRT	15	5 (10)	7 (10)	2 (8)	1 (7)
DRS	6	2 (4)	2 (3)	1 (4)	1 (7)
WRMT	29	4 (8)	11 (16)	11 (42)	3 (20)
KMDAT	35	11 (22)	11 (16)	8 (31)	5 (33)
SDMT	4	2 (4)	2 (3)	0 (0)	0 (0)
DIAM	1	24 (48)	25 (37)	4 (15)	0 (0)
SBIS	53	24 (48)	25 (37)	4 (15)	0 (0)
WISCR	107	21 (42)	49 (73)	23 (89)	14 (93)
SIT	9	6 (12)	2 (3)	0 (0)	1 (7)
MSCA	1	0 (0)	0 (0)	0 (0)	1 (7)
FRPVT	1	0 (0)	0 (0)	1 (4)	0 (0)
QKT	4	2 (4)	1 (2)	1 (4)	0 (0)
PPVT	16	2 (4)	11 (16)	2 (8)	1 (7)
GHDT	2	0 (0)	2 (3)	0 (0)	0 (0)
HNTMA	1	1 (2)	0 (0)	0 (0)	0 (0)
KAIT	0	0 (0)	0 (0)	0 (0)	0 (0)
OLMAT	12	8 (16)	4 (6)	0 (0)	0 (0)
PMAT	1	1 (2)	0 (0)	0 (0)	0 (0)
BVMGT	74	24 (48)	31 (46)	10 (39)	8 (53)
DTVP	18	3 (6)	12 (18)	3 (12)	0 (0)
MFDT	6	0 (0)	3 (5)	2 (8)	1 (7)
DTVMI	16	3 (3)	7 (10)	5 (19)	1 (7)
PPMS	14	5 (10)	8 (12)	1 (4)	0 (0)
GFTA	3	0 (0)	2 (3)	1 (4)	0 (0)
ADT	33	12 (24)	14 (21)	6 (23)	1 (7)
NSST	6	3 (6)	3 (5)	0 (0)	0 (0)
ITPA	42	14 (28)	11 (16)	12 (46)	5 (33)
ABS	8	4 (8)	2 (6)	1 (4)	1 (7)
ABSPS	24	8 (16)	10 (15)	4 (15)	2 (13)
VSMS	18	5 (10)	6 (9)	6 (23)	1 (7)
PCER	54	2 (4)	17 (25)	16 (62)	8 (53)
ITY	13	3 (6)	4 (5)	5 (19)	1 (7)
PPR	13	3 (6)	2 (3)	8 (23)	2 (13)
PQBPC	59	24 (48)	19 (28)	7 (27)	9 (60)
PHCSCS	60	23 (46)	25 (37)	9 (35)	3 (20)
RIBT	16	6 (12)	4 (6)	4 (15)	2 (13)
SAM	19	7 (14)	8 (12)	3 (12)	1 (7)
TAT	16	2 (4)	5 (8)	3 (12)	6 (40)
		n = 50	n = 67	n = 26	n = 15

Note: See Appendix A-3 for exact title of each device.
One case with score below 6 was omitted (n = 158).

Table 5.1

Ranking of Devices According to Technical Information Usage

Rank	Overall Use Rank	Name of Device	Number of Requests for Technical Information
1	1	Wechsler Intelligence Scale for Children (WISCR)	47
2	6	Frequency Counting or Event Recording (FCER)	42
3	4	Peterson-Quay Behavior Problem Checklist (PQBPC)	41
4	3	Piers-Harris Children's Self-Concept Scale (PHCSCS)	38
4	2	Bender Visual-Motor Gestalt Test (BVMGT)	38
6	5	Stanford-Binet Intelligence Scale (SBIS)	23
7	14	Adaptive Behavior Scale-Public School Version (ABSPS)	18
8.5	16.5	School Apperception Method (SAM)	17
8.5	11.5	Auditory Discrimination Test (ADT)	17
10	7	Illinois Test of Psycholinguistic Abilities (ITPA)	16
11	9	Peabody Individual Achievement Test (PIAT)	15
12	11.5	Iowa Test of Basic Skills (ITBS)	13
13.5	8	Wide Range Achievement Test (WRAT)	11
13.5	27.5	Permanent Products (PPT)	11
15	18.5	Vineland Social Maturity Scale (VSMS)	9
19	18.5	Developmental Test of Visual Perception (DTVP)	8
19	15	California Achievement Test (CAT)	8
19	10	Key Math Diagnostic Arithmetic Test (KMDAT)	8
19	25	Purdue Perceptual-Motor Survey (PPMS)	8
19	21	Thematic Apperception Test (TAT)	8
19	16.5	Stanford Achievement Test (SAT)	8
19	25	Developmental Test of Visual-Motor Integration (DTVMI)	8
23.5	13	Woodcock Reading Mastery Test (WRMT)	7
23.5	27.5	Interval or Time Sampling (ITY)	7
25	21	Rorschach Inkblot Test (RIBT)	6
27	34	Memory for Designs Test (MFDT)	5
27	34	Northwestern Syntax Screening Test (NSST)	5
27	29	Otis-Lennon Mental Abilities Test (OLMAT)	5
29.5	21	Peabody Picture Vocabulary Test (PPVT)	4
29.5	31.5	Adaptive Behavior Scale (ABS)	4
31.5	25	Durrell Analysis of Reading Difficulty (DARD)	3
31.5	34	Slosson Intelligence Test (SIT)	3
34.5	31.5	Metropolitan Achievement Test (MAT)	2
34.5	30	Gates-McGinitie Reading Test (GMRT)	2
34.5	37	Gates-McKillop Reading Diagnostic Test (GMRDT)	2
34.5	38.5	Stanford Diagnostic Math Test (SDMT)	2
40.5	36	Diagnostic Reading Scales (DRS)	1
40.5	40.5	Gray Oral Reading Test (GORT)	1
40.5	23	Stanford Diagnostic Reading Test (SDRT)	1
40.5	38.5	Quick Test (QKT)	1
40.5	42.5	Goodenough-Harris Drawing Test (GHDT)	1
40.5	46	Henmon-Nelson Test of Mental Abilities (HNTMA)	1
40.5	46	Diagnosis: An Instructional Aid in Mathematics (DIAM)	1
40.5	46	Primary Mental Abilities Test (PMAT)	1
47	49	Kuhlman-Anderson Intelligence Test (KIAT)	0
47	40.5	Goldman-Fristoe Test of Articulation (GFTA)	0
47	42.5	Gilmore Oral Reading Test (GORLT)	0
47	46	McCarthy Scales of Children's Abilities (MSCA)	0
47	46	Full Range Picture Vocabulary Test (FRPVT)	0

Table 5.2

Use of Technical Information from Various Domains

Domain	Number of Requests for Technical Information				
	None	One	Two	Three	Four
Intelligence	84	64	9	1	0
	53%	41%	6%	1%	0%
Achievement	92	48	14	3	0
	58%	31%	9%	2%	0%
Perceptual-Motor	102	46	9	1	1
	64%	29%	6%	1%	1%
Language	122	36	1	0	0
	77%	23%	1%	0%	0%
Adaptive Behavior	127	32	0	0	0
	80%	20%	0%	0%	0%
Behavior Ratings	79	62	15	2	1
	50%	39%	9%	1%	1%
Personality	104	44	9	2	0
	65%	28%	6%	1%	0%

Note: Different numbers of devices were available in all domains. Upper value is number of participants. Lower value is relative percentage of total number of participants (n=159).

Table 5.3

Use of Technical Information by Professionals

in Seven Domains for Sixteen Referral Conditions

Referral	Intelligence		Achievement		Perceptual Motor		Adaptive Behavior Scales		Behavioral Recordings		Language		Personality		Total
1	6	.23	3	.12	5	.19	0	.00	5	.19	4	.15	3	.12	26
2	5	.19	4	.15	5	.19	4	.15	4	.15	2	.08	2	.08	26
3	5	.16	6	.19	4	.13	3	.09	6	.19	2	.06	6	.19	32
4	5	.19	3	.11	2	.07	2	.07	7	.26	3	.11	5	.19	27
5	5	.19	6	.22	4	.15	2	.07	4	.22	3	.11	3	.11	27
6	4	.22	4	.22	3	.17	1	.06	4	.22	0	.00	2	.11	18
7	1	.03	5	.15	5	.15	5	.15	7	.21	4	.12	6	.18	33
8	8	.27	5	.17	4	.13	1	.03	5	.17	2	.07	5	.17	30
9	5	.22	3	.17	3	.13	2	.09	4	.17	2	.09	4	.17	23
10	2	.13	3	.20	3	.20	2	.13	2	.13	1	.07	2	.13	15
11	7	.22	3	.09	2	.06	4	.13	8	.25	1	.03	7	.22	32
12	3	.16	4	.21	3	.16	1	.05	4	.21	1	.05	3	.16	19
13	5	.22	4	.17	5	.22	1	.04	3	.13	4	.17	1	.04	23
14	6	.20	5	.17	6	.20	3	.10	4	.13	4	.13	2	.07	30
15	4	.20	3	.15	2	.10	0	.00	8	.40	2	.10	1	.05	20
16	3	.16	4	.21	1	.05	1	.05	5	.26	2	.11	3	.16	19
Total:	74	.18	65	.16	57	.14	32	.08	80	.20	37	.09	55	.14	399

Table 5.4

Requests for Various Technical Information by School Personnel

Device	Use of Device	Use of Manual	School Psychologists	Special Educators	School Administrators	Regular Educators	Other Personnel
CAT	20	9	0 (0)	4 (8)	1 (6)	3 (6)	1 (7)
ITBS	33	13	0 (0)	3 (6)	3 (18)	3 (6)	4 (27)
MAT	8	2	0 (0)	1 (2)	0 (0)	1 (2)	0 (0)
SAT	19	8	1 (4)	3 (6)	0 (0)	4 (8)	0 (0)
GMRT	10	2	0 (0)	2 (4)	0 (0)	0 (0)	0 (0)
PIAT	39	17	1 (4)	6 (12)	5 (29)	2 (4)	3 (20)
WRAT	38	12	2 (8)	3 (6)	3 (18)	3 (6)	1 (7)
GORT	3	1	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)
GORLT	2	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
GMRDT	5	2	0 (0)	0 (0)	0 (0)	2 (4)	0 (0)
DARD	15	3	0 (0)	3 (6)	0 (0)	0 (0)	0 (0)
SDRT	14	1	0 (0)	1 (0)	0 (0)	1 (2)	0 (0)
DRS	6	2	0 (0)	1 (2)	0 (0)	1 (2)	0 (0)
WRMT	29	7	3 (12)	3 (6)	0 (0)	0 (0)	1 (7)
KMDAT	35	9	1 (4)	3 (6)	1 (6)	4 (8)	0 (0)
SDMT	4	2	0 (0)	1 (2)	0 (0)	0 (0)	1 (7)
SBIS	53	24	1 (4)	4 (8)	3 (18)	15 (29)	1 (7)
WISCR	107	47	1 (4)	22 (44)	8 (47)	7 (14)	9 (60)
SIT	9	3	0 (0)	0 (0)	1 (6)	2 (4)	0 (0)
MSCA	1	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
PRPVT	1	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
QKT	4	1	0 (0)	9 (0)	0 (0)	1 (2)	0 (0)
PPVT	156	3	0 (0)	1 (2)	1 (6)	3 (6)	0 (0)
GHDT	12	1	1 (4)	0 (0)	0 (0)	0 (0)	0 (0)
KMTMA	1	1	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)
KAIT	0	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
OLMAT	1	4	0 (0)	0 (0)	0 (0)	4 (8)	0 (0)
PMAT	1	1	0 (0)	0 (0)	0 (0)	0 (0)	1 (7)
BVMGT	74	36	2 (8)	9 (18)	5 (29)	13 (25)	7 (47)
DTVP	18	10	0 (0)	2 (4)	1 (6)	7 (14)	0 (0)
MFDT	6	6	0 (0)	2 (4)	0 (0)	3 (6)	1 (7)
DTVMI	156	7	0 (0)	3 (6)	1 (6)	3 (6)	0 (0)
PPMS	14	8	0 (0)	2 (4)	1 (6)	4 (8)	1 (7)
GFTA	3	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
ADT	33	17	0 (0)	3 (6)	5 (29)	4 (8)	5 (33)
MSST	6	6	0 (0)	3 (6)	1 (6)	4 (8)	0 (0)
ITPA	42	15	0 (0)	6 (12)	2 (12)	5 (10)	2 (13)
KDS	8	3	0 (0)	1 (2)	0 (0)	1 (2)	1 (7)
ARSPS	24	18	1 (4)	3 (6)	2 (12)	8 (15)	4 (27)
VRMS	18	9	0 (0)	2 (4)	1 (6)	6 (12)	0 (0)
PCER	54	41	7 (28)	10 (20)	4 (24)	15 (29)	5 (33)
ITY	13	7	1 (4)	1 (2)	1 (6)	2 (4)	2 (13)
FPR	13	11	3 (12)	3 (6)	3 (18)	1 (2)	1 (7)
DIAM	1	1	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)
PQSPC	59	39	3 (12)	9 (18)	5 (29)	18 (35)	4 (27)
PHCSCS	60	39	4 (16)	10 (20)	2 (12)	19 (37)	4 (27)
RIBT	16	6	2 (8)	2 (4)	1 (6)	0 (0)	1 (7)
SAM	19	17	4 (16)	2 (4)	2 (12)	8 (15)	1 (7)
TAT	16	8	4 (16)	1 (2)	1 (6)	2 (4)	0 (0)
			n = 25	n = 50	n = 17	n = 52	n = 15

Note: See Appendix A-3 for exact title of each device.
( ) number of professionals to use technical information.

Table 5.5

Requests for Technical Information by Knowledge-Based Groups

Device	Requests	Knowledge of Assessment: Very Low (6-10)	Low (11-15)	High (16-20)	Very High (21-25)
CAT	9	4 (8)	4 (6)	1 (4)	0 (0)
ITBS	13	6 (12)	6 (9)	1 (4)	0 (0)
MAT	2	2 (4)	0 (0)	0 (0)	0 (0)
SAT	8	2 (4)	4 (6)	1 (4)	1 (7)
GMRT	2	0 (0)	2 (3)	0 (0)	0 (0)
PIAT	17	6 (12)	6 (9)	4 (15)	1 (7)
WRAT	12	3 (6)	6 (9)	3 (12)	0 (0)
GORT	1	1 (2)	0 (0)	0 (0)	0 (0)
GORLT	0	0 (0)	0 (0)	0 (0)	0 (0)
GMRDT	2	1 (2)	1 (2)	0 (0)	0 (0)
DARD	3	1 (2)	1 (2)	1 (4)	0 (0)
SDRT	1	1 (2)	0 (0)	0 (0)	0 (0)
DRS	2	1 (2)	0 (0)	1 (4)	0 (0)
WRMT	7	0 (0)	2 (3)	3 (12)	2 (13)
KMDAT	9	3 (6)	4 (6)	2 (8)	0 (0)
SDMT	2	1 (2)	1 (2)	0 (0)	0 (0)
SBIS	24	12 (24)	11 (16)	0 (0)	1 (7)
WISCR	47	12 (24)	22 (33)	12 (46)	1 (7)
SIT	3	1 (2)	2 (3)	0 (0)	0 (0)
MSCA	0	0 (0)	0 (0)	0 (0)	0 (0)
FRPVT	0	0 (0)	0 (0)	0 (0)	0 (0)
QKT	1	1 (2)	0 (0)	0 (0)	0 (0)
PPVT	5	1 (2)	4 (6)	0 (0)	0 (0)
GHDT	1	0 (0)	1 (2)	0 (0)	0 (0)
HNTMA	1	1 (2)	0 (0)	0 (0)	0 (0)
KAIT	0	0 (0)	0 (0)	0 (0)	0 (0)
OLMAT	4	1 (2)	3 (5)	0 (0)	0 (0)
PMAT	1	1 (2)	0 (0)	0 (0)	0 (0)
BVMGT	36	14 (28)	18 (27)	3 (12)	1 (7)
DTVP	10	1 (2)	9 (13)	0 (0)	0 (0)
MFDT	6	1 (2)	3 (5)	2 (8)	0 (0)
DTVMI	7	2 (4)	3 (5)	2 (8)	0 (0)
PPMS	8	4 (8)	4 (6)	0 (0)	0 (0)
GFTA	0	0 (0)	0 (0)	0 (0)	0 (0)
ADT	17	5 (10)	9 (13)	2 (8)	0 (0)
NSST	6	4 (8)	2 (3)	0 (0)	0 (0)
ITPA	15	7 (14)	7 (10)	1 (4)	9 (0)
HDS	3	2 (4)	1 (2)	0 (0)	0 (0)
ABSPS	18	6 (12)	7 (10)	4 (15)	1 (7)
VSMS	9	2 (4)	6 (9)	1 (4)	0 (0)
FCER	41	11 (22)	15 (22)	11 (42)	3 (20)
ITY	7	1 (2)	3 (5)	3 (12)	0 (0)
PPR	11	3 (6)	2 (3)	5 (19)	1 (7)
DIAM	1	0 (0)	1 (2)	0 (0)	0 (0)
PQBPC	39	18 (36)	14 (21)	5 (19)	2 (13)
PHCSCS	39	16 (32)	17 (25)	5 (19)	1 (7)
RIBT	6	3 (6)	2 (3)	1 (4)	0 (0)
SAM	17	6 (12)	8 (12)	2 (8)	1 (7)
TAT	8	2 (4)	2 (3)	2 (8)	2 (13)

Note: See Appendix A-3 for exact title of each device.
One case with score below 6 was omitted (N = 158).
( )=percentage of use within group.

Table 6.1

Ranking of Devices According to Use of Qualitative Information

Rank	Overall Use Rank	Name of Device	Number of Requests for Qualitative Information
1	1	Wechsler Intelligence Scale for Children (WISCR)	79
2	2	Bender Visual-Motor Gestalt Test (BVMGT)	65
3	6	Frequency Counting or Event Recording (FCER)	49
4	3	Piers-Harris Children's Self-Concept Scale (PHCSCS)	46
5	4	Peterson-Quay Behavior Problem Checklist (PQBPC)	39
6	5	Stanford-Binet Intelligence Scale (SBIS)	37
7	9	Peabody Individual Achievement Test (PIAT)	27
8.5	8	Wide Range Achievement Test (WRAT)	26
8.5	7	Illinois Test of Psycholinguistic Abilities (ITPA)	26
10	11.5	Iowa Test of Basic Skills (ITBS)	21
11	13	Woodcock Reading Mastery Test (WRMT)	18
12	14	Adaptive Behavior Scale-Public School Version (ABSPS)	17
13	10	Key Math Diagnostic Arithmetic Test (KMDAT)	16
14	11.5	Auditory Discrimination Test (ADT)	15
15	16.5	School Apperception Method (SAM)	14
16	16.5	Stanford Achievement Test (SAT)	13
18.5	27.5	Interval or Time Sampling (ITY)	12
18.5	18.5	Developmental Test of Visual-Motor Integration (DTVMI)	12
18.5	29	Otis-Lennon Mental Abilities Test (OLMAT)	12
18.5	21	Rorschach Inkblot Test (RIB)	12
21.5	21	Peabody Picture Vocabulary Test (PPVT)	11
21.5	25	Developmental Test of Visual Perception (DTVP)	11
23.5	15	California Achievement Test (CAT)	10
23.5	25	Purdue Perceptual Motor Survey (PPMS)	10
26.5	25	Durrell Analysis of Reading Difficulty (DARD)	9
26.5	23	Stanford Diagnostic Reading Test (SDRT)	9
26.5	18.5	Vineland Social Maturity Scale (VSMS)	9
26.5	21	Thematic Apperception Test (TAT)	9
29	27.5	Permanent Products (PPR)	8
30.5	34	Slosson Intelligence Test (SIT)	7
30.5	31.5	Adaptive Behavior Scale (ABS)	7
32.5	31.5	Metropolitan Achievement Test (MAT)	6
32.5	30	Gates-McGinitie Reading Test (GMRT)	6
35	38.5	Stanford Diagnostic Math Test (SDMT)	5
35	34	Memory for Designs Test (MFDT)	5
35	34	Northwestern Syntax Screening Test (NSST)	5
37	36	Diagnostic Reading Scale (DRS)	4
38.5	40.5	Gray Oral Reading Test (GORT)	3
38.5	37	Gates-McKillop Reading Diagnostic Test (GMRDT)	3
41	38.5	Quick Test (QKT)	2
41	42.5	Goodenough-Harris Drawing Test (GHDT)	2
41	40.5	Goldman-Fristoe Test of Articulation (GFTA)	2
45	42.5	Gilmore Oral Reading Test (GORT)	1
45	46	McCarthy Scales of Children's Abilities (MSCA)	1
45	46	Full Range Picture Vocabulary Test (FRPVT)	1
45	46	Henmon-Nelson Test of Mental Abilities (HNTMA)	1
45	46	Diagnosis: An Instructional Aid in Mathematics (DIAM)	1
48.5	49	Kuhlmann-Anderson Intelligence Test (KIAT)	0
48.5	46	Primary Mental Abilities Test (PMAT)	0

Table 6.2

Use of Qualitative Information from Tests in Various Domains

Domain	Number of Selections None	One	Two	Three	Four
Intelligence	39	93	22	4	1
	24%	58%	14%	3%	1%
Achievement	53	56	31	16	3
	33%	35%	19%	10%	2%
Perceptual-Motor	74	70	12	3	0
	47%	44%	7%	2%	0%
Language	115	40	4	0	0
	72%	25%	3%	0%	0%
Adaptive Behavior	127	31	1	0	0
	80%	19%	1%	0%	0%
Behavior Ratings	80	55	20	3	1
	50%	34%	13%	2%	1%
Personality	95	50	11	3	0
	60%	31%	7%	2%	0%

Note: Different numbers of devices were available in all domains.
Upper value is number of participants.
Lower value is relative percentage of total number of participants (n = 159).

Table 6.3

Use of Qualitative Information in Various Domains for Each Referral Condition

	Intelligence		Achievement		Perceptual Motor		Adaptive Behavior Scales		Behavioral Recordings		Language		Personality		Total
1	9	.22	15	.37	4	.10	0	.00	5	.13	5	.13	2	.05	40
2	11	.22	11	.22	11	.22	4	.08	6	.12	4	.08	2	.04	49
3	6	.11	15	.27	5	.09	3	.06	11	.20	4	.07	11	.20	55
4	8	.20	8	.20	3	.07	1	.02	11	.27	3	.07	7	.17	41
5	10	.21	11	.24	7	.15	4	.09	4	.09	3	.07	7	.15	46
6	12	.30	8	.20	7	.17	1	.02	7	.17	1	.02	5	.12	41
7	9	.18	9	.18	9	.18	4	.07	10	.20	3	.06	7	.13	51
8	13	.27	13	.27	6	.12	1	.02	8	.16	1	.02	7	.14	49
9	12	.32	7	.19	9	.24	3	.08	2	.05	2	.05	2	.05	37
10	10	.26	12	.32	9	.24	3	.08	0	.00	1	.02	3	.08	38
11	11	.26	4	.09	4	.09	2	.05	11	.26	4	.09	7	.16	43
12	6	.15	14	.36	5	.13	1	.02	5	.13	3	.08	5	.13	39
13	10	.26	13	.33	7	.18	2	.05	2	.05	3	.08	2	.05	39
14	10	.25	12	.29	7	.17	3	.07	3	.07	4	.10	2	.05	41
15	8	.21	13	.33	4	.10	1	.03	9	.23	2	.05	2	.05	39
16	8	.14	13	.23	6	.11	0	.00	14	.25	5	.09	10	.18	56
Total	153	.22	178	.25	103	.15	33	.05	108	.15	48	.07	81	.11	704

Table 6.4

Requests for Various Qualitative Information by School Personnel

Device	Number of Requests	Requests by School Psychologists	Requests by Special Teacher	Requests by School Administrators	Requests by Regular Teachers	Requests by Other Personnel
CAT	10	1 (4)	3 (6)	1 (6)	4 (8)	1 (7)
ITBS	21	1 (4)	5 (10)	3 (18)	7 (14)	5 (33)
MAT	6	0 (0)	1 (2)	1 (6)	3 (6)	1 (7)
SAT	13	2 (8)	5 (10)	2 (12)	4 (8)	0 (0)
GMRT	6	1 (4)	2 (4)	0 (0)	2 (4)	1 (7)
PIAT	27	7 (28)	13 (26)	5 (29)	0 (0)	2 (13)
WRAT	26	5 (20)	12 (24)	2 (12)	5 (10)	2 (13)
GORT	3	0 (0)	3 (6)	0 (0)	0 (0)	0 (0)
GORLT	1	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)
GMRDT	3	0 (0)	0 (0)	0 (0)	2 (4)	1 (7)
DARD	9	0 (0)	5 (10)	1 (16)	0 (0)	3 (20)
SDRT	9	1 (4)	5 (10)	1 (6)	2 (4)	0 (0)
DRS	4	1 (4)	1 (2)	0 (0)	2 (4)	0 (0)
WRMT	18	7 (28)	8 (16)	0 (0)	1 (2)	2 (13)
KMDAT	16	6 (24)	7 (14)	1 (6)	1 (2)	1 (7)
SDMT	5	0 (0)	2 (4)	0 (0)	2 (4)	1 (7)
SBIS	37	1 (4)	12 (24)	5 (29)	17 (33)	2 (13)
WISCR	79	20 (80)	27 (54)	11 (65)	14 (27)	7 (47)
SIT	7	0 (0)	2 (4)	1 (6)	4 (8)	0 (0)
MSCA	1	1 (4)	0 (0)	0 (0)	0 (0)	0 (0)
FRPVT	1	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
QKT	2	0 (0)	0 (0)	0 (0)	1 (2)	1 (7)
PPVT	11	2 (8)	4 (8)	2 (12)	2 (4)	1 (7)
GHDT	2	1 (4)	0 (0)	0 (0)	1 (2)	0 (0)
HNTMA	1	0 (0)	1 (2)	0 (0)	0 (0)	0 (0)
KAIT	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
OLMAT	12	0 (0)	0 (0)	0 (0)	12 (23)	0 (0)
PMAT	0	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
BVMGT	65	14 (56)	16 (32)	7 (41)	20 (39)	8 (53)
DTUP	11	0 (0)	3 (6)	2 (12)	6 (12)	0 (0)
MFDT	5	1 (4)	2 (4)	0 (0)	1 (2)	1 (7)
DTVMI	12	2 (8)	5 (10)	3 (18)	2 (4)	0 (0)
PPMS	10	0 (0)	4 (8)	2 (12)	4 (8)	0 (0)
GFTA	2	0 (0)	1 (2)	0 (0)	1 (2)	0 (0)
ADT	15	0 (0)	2 (4)	3 (18)	5 (10)	5 (33)
NSST	5	0 (0)	3 (6)	1 (6)	1 (2)	0 (0)
ITPA	26	3 (12)	15 (30)	2 (12)	4 (8)	2 (13)
ABS	7	1 (4)	2 (4)	0 (0)	2 (4)	2 (13)
ABSPS	17	1 (4)	1 (2)	2 (12)	9 (17)	4 (27)
VSMS	9	2 (8)	2 (4)	0 (0)	5 (10)	0 (0)
FCER	49	12 (48)	12 (24)	4 (24)	15 (29)	6 (40)
ITY	12	3 (12)	2 (4)	2 (12)	3 (6)	2 (13)
PPR	8	4 (16)	1 (2)	2 (12)	0 (0)	1 (7)
DIAM	1	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)
PQBPC	39	7 (28)	10 (20)	3 (18)	15 (29)	4 (27)
PHCSCS	46	6 (24)	13 (26)	2 (12)	21 (40)	4 (27)
RIBT	12	4 (16)	2 (4)	0 (0)	3 (6)	3 (20)
SAM	14	3 (12)	2 (4)	0 (0)	7 (14)	2 (13)
TAT	9	6 (24)	1 (2)	1 (6)	1 (2)	0 (0)

Note: See Appendix A-3 for exact title of each device.
( ) percent of group members to use device.

Table 6.5

Requests for Qualitative Information by Knowledge-Based Groups

Device	Number of Requests	Very Low (6-10)	Low (11-15)	High (16-20)	Very High (21-25)
CAT	10	4 (8)	4 (6)	1 (4)	1 (7)
ITBS	21	8 (16)	8 (12)	4 (15)	1 (7)
MAT	6	5 (10)	0 (0)	1 (4)	0 (0)
SAT	13	2 (4)	7 (10)	3 (12)	1 (7)
GMRT	6	3 (6)	2 (3)	0 (0)	1 (7)
PIAT	27	8 (16)	8 (12)	6 (23)	5 (23)
WRAT	26	6 (12)	14 (21)	4 (15)	2 (13)
GORT	3	3 (6)	0 (0)	0 (0)	0 (0)
GORLT	1	1 (2)	0 (0)	0 (0)	0 (0)
GMRDT	3	1 (2)	1 (2)	1 (4)	0 (0)
DARD	9	2 (4)	3 (5)	4 (15)	0 (0)
SDRT	9	2 (4)	3 (5)	4 (15)	0 (0)
DRS	4	2 (4)	1 (2)	0 (0)	1 (7)
WRMT	18	1 (2)	5 (8)	9 (35)	3 (20)
KMDAT	16	4 (8)	5 (8)	5 (19)	2 (13)
SDMT	5	2 (4)	3 (5)	0 (0)	0 (0)
SBIS	37	17 (34)	16 (24)	4 (15)	0 (0)
WISCR	79	13 (26)	34 (51)	21 (81)	11 (73)
SIT	6	4 (8)	2 (3)	0 (0)	0 (0)
MSCA	1	0 (0)	0 (0)	0 (0)	1 (7)
FRPVT	1	0 (0)	0 (0)	1 (4)	0 (0)
QKT	2	2 (4)	0 (0)	0 (0)	0 (0)
PPVT	11	1 (2)	8 (12)	1 (4)	1 (7)
GHDT	2	0 (0)	2 (3)	0 (0)	0 (0)
HNTMA	1	1 (2)	0 (0)	0 (0)	0 (0)
KAIT	0	0 (0)	0 (0)	0 (0)	0 (0)
OLMAT	12	8 (16)	4 (6)	0 (0)	0 (0)
PMAT	0	0 (0)	0 (0)	0 (0)	0 (0)
BVMGT	65	21 (42)	27 (40)	9 (35)	8 (53)
DTVP	11	1 (2)	9 (13)	1 (4)	0 (0)
MFDT	5	0 (0)	2 (3)	2 (8)	1 (7)
DTVMI	12	2 (4)	5 (8)	4 (15)	1 (7)
PPMS	10	5 (10)	4 (6)	1 (4)	0 (0)
GFTA	2	0 (0)	2 (3)	0 (0)	0 (0)
ADT	14	6 (12)	7 (10)	1 (4)	0 (0)
NSST	5	3 (6)	2 (3)	0 (0)	0 (0)
ITPA	26	8 (16)	8 (12)	7 (27)	3 (20)
ABS	7	3 (6)	2 (3)	1 (4)	1 (7)
ABSPS	17	6 (12)	7 (10)	3 (12)	1 (7)
VSMS	9	3 (6)	3 (5)	2 (8)	1 (7)
FCER	48	11 (22)	14 (21)	15 (58)	8 (53)
ITY	12	2 (4)	4 (6)	5 (19)	1 (7)
PPR	8	2 (4)	0 (0)	5 (19)	1 (7)
DIAM	1	1 (2)	0 (0)	0 (0)	0 (0)
PQBPC	39	17 (34)	11 (16)	5 (19)	6 (40)
PHCSCS	46	18 (36)	19 (28)	7 (27)	2 (13)
RIBT	12	5 (10)	4 (6)	2 (8)	1 (7)
SAM	14	7 (14)	5 (8)	2 (8)	0 (0)
TAT	9	0 (0)	3 (5)	2 (8)	4 (27)
		n=50	n=67	n=26	n=15

NOTE: See Appendix A-3 for exact title of each device.
( ) percent of group members to use device.

Table 7.1

Percentages and Mean Ratings for Likelihood of Eligibility for Services as a Function of Referral Information

Classification	Referral Condition[a] 1 (16)[b]	2 (16)	3 (15)	4 (13)	5 (15)	6 (14)	7 (14)	8 (14)	9 (14)	10 (12)	11 (14)	12 (11)	13 (13)	14 (13)	15 (14)	16 (13)	Total
% Eligible	43.7	25.0	46.7	46.7	40.0	57.1	50.0	71.4	71.4	50.0	50.0	45.5	53.8	61.5	64.3	46.2	51.1
% Ineligible	12.6	43.7	46.7	33.3	46.7	7.1	28.6	14.3	7.1	33.3	42.9	18.2	38.5	23.1	28.6	0.0	26.9
Mean Rating[c]	2.6 (0.9)	3.2 (1.0)	2.9 (1.4)	2.6 (1.2)	2.9 (1.3)	2.4 (0.8)	2.6 (1.1)	2.1 (1.2)	2.0 (1.0)	2.5 (1.3)	2.8 (1.1)	2.5 (1.0)	2.6 (1.3)	2.5 (1.3)	2.4 (1.3)	2.5 (0.7)	2.6 (1.1)

[a] See Appendix A-2 for descriptions of each referral condition.

[b] Number of subjects.

[c] Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 7.2

Percentages and Mean Ratings for Likelihood of Eligibility for Services as a Function of Professional Role

Eligibility	Professional Role: School Psychologist (30)[a]	Special Educator (84)	School Administrator (28)	Regular Educator (58)	Support Personnel (23)	Total (223)
% Eligible	53.3	46.4	32.1	61.2	52.1	51.1
% Ineligible	36.6	18.9	50.0	24.4	21.9	26.9
Mean Rating[b]	2.7 (1.2)	2.6 (1.0)	3.0 (1.3)	2.4 (1.1)	2.4 (1.1)	2.6 (1.1)

[a]Number of subjects.

[b]Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 7.3

Percentages and Mean Ratings for Likelihood of Eligibility for Services as a Function of Knowledge about Assessment

Eligibility	Pretest Score 6-10 (68)	11-15 (101)	16-20 (34)	21-25 (19)	Total (223)
% Eligible	60.2	48.5	38.2	57.8	51.1
% Ineligible	19.4	29.8	32.4	26.3	26.9
Mean Rating[b]	2.5 (1.1)	2.6 (1.2)	2.8 (1.0)	2.6 (1.1)	2.6 (1.1)

[a]Number of subjects.

[b]Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 8.1

Percentages and Mean Ratings for Likelihood of Classification as a Function of Referral Information

Classification		Referral Condition[a] 1 (16)[b]	2 (16)	3 (15)	4 (13)	5 (15)	6 (14)	7 (14)	8 (14)	9 (14)	10 (12)	11 (14)	12 (11)	13 (13)	14 (13)	15 (14)	16 (13)	Total (223)
Mentally Retarded	% Likely	6	6	0	7	0	7	0	0	0	17	0	0	8	0	0	8	4
	% Unlikely	88	88	100	80	100	86	100	100	100	83	100	100	84	100	93	84	92
	Mean Rating[c]	4.5 (0.9)	4.6 (1.1)	4.8 (0.4)	4.2 (1.1)	4.7 (0.5)	4.4 (0.9)	4.9 (0.3)	4.8 (0.4)	4.8 (0.4)	4.5 (1.2)	5.0 (0.0)	4.8 (0.4)	4.5 (1.0)	4.9 (0.3)	4.7 (0.6)	4.5 (1.0)	4.7 (0.8)
Learning Disabled	% Likely	62	50	47	53	40	36	36	72	43	42	29	55	54	54	50	15	47
	% Unlikely	19	31	20	20	47	21	28	14	21	25	64	9	23	15	21	46	27
	Mean Rating	2.4 (1.0)	2.8 (1.3)	2.6 (1.0)	2.6 (1.1)	3.1 (1.3)	2.9 (0.8)	2.9 (0.8)	2.3 (1.1)	2.6 (1.0)	2.8 (1.1)	3.4 (0.9)	2.5 (0.8)	2.5 (1.1)	2.5 (1.1)	2.5 (1.1)	3.4 (0.9)	2.7 (1.1)
Emotionally Disturbed	% Likely	0	19	27	53	20	7	28	28	14	17	29	18	0	7	43	31	22
	% Unlikely	75	62	46	40	60	71	36	36	43	50	50	55	85	23	50	54	55
	Mean Rating	4.0 (0.7)	3.8 (1.2)	3.4 (1.1)	2.9 (1.5)	3.7 (1.1)	4.0 (1.0)	3.1 (1.1)	3.1 (1.1)	3.4 (0.9)	3.4 (1.2)	3.4 (1.1)	3.5 (0.9)	4.1 (0.6)	4.1 (1.0)	3.2 (1.4)	3.4 (1.5)	3.5 (1.1)

[a] For descriptions of each referral condition see Appendix A-2.

[b] Number of subjects.

[c] Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 8.2

The Influence of Referral Information on Classification Decisions as a Function of Eligibility Decision

		Referral Condition[a]															
		1		2		3		4		5		6		7		8	
Classification		$\bar{X}_R$[b]	%[c]	$\bar{X}_R$	%	$\bar{X}_R$	%	$\bar{X}_R$	%	$\bar{X}_R$	%	$\bar{X}_R$	%	$\bar{X}_R$	%	$\bar{X}_R$	%
Eligible	MR	4.7 (0.5)	0	4.8 (0.5)	0	4.9 (0.4)	0	4.3 (0.8)	0	4.7 (0.5)	0	4.3 (1.0)	13	4.9 (0.4)	0	4.8 (0.4)	0
	LD	1.9 (0.4)	100	1.5 (0.6)	100	2.0 (0.8)	71	1.9 (0.7)	86	2.3 (1.4)	67	2.8 (0.7)	38	2.6 (0.8)	57	1.9 (0.7)	80
	ED	3.9 (0.7)	0	3.5 (1.7)	50	3.4 (1.4)	43	2.6 (1.7)	71	3.8 (1.2)	17	4.0 (0.8)	0	3.0 (1.2)	43	2.9 (1.0)	30
		n = 7		n = 4		n = 7		n = 7		n = 6		n = 8		n = 7		n = 10	
Ineligible	MR	4.0 (1.4)	0	4.1 (1.6)	14	4.9 (0.4)	0	4.0 (1.7)	20	4.7 (0.5)	7	5.0 (0.0)	0	5.0 (0.0)	0	5.0 (0.0)	0
	LD	4.0 (0.0)	0	3.9 (1.1)	14	3.3 (0.8)	14	3.0 (1.2)	40	3.7 (1.1)	14	4.0 (0.0)	0	3.8 (0.5)	0	4.5 (0.7)	0
	ED	4.0 (1.4)	0	4.1 (1.2)	14	3.3 (1.0)	14	3.6 (1.1)	20	3.9 (1.1)	14	2.0 (0.0)	100	3.5 (0.6)	0	3.5 (0.7)	0
		n = 2		n = 7		n = 7		n = 5		n = 7		n = 1		n = 4		n = 2	

		Referral Condition																Total (223)	
		9		10		11		12		13		14		15		16			
Classification		$\bar{X}_R$[b]	%	$\bar{X}_R$	%	$\bar{X}_R$	%	$\bar{X}_R$	%	$\bar{X}_R$	%	$\bar{X}_R$	%	$\bar{X}_R$	%	$\bar{X}_R$	%	$\bar{X}_R$	%
Eligible	MR	4.8 (0.4)	0	4.0 (1.5)	33	5.0 (0.0)	0	5.0 (0.0)	0	4.7 (0.5)	0	4.9 (0.4)	0	4.8 (0.4)	0	4.3 (1.2)	17	4.7 (0.7)	4
	LD	2.4 (1.1)	60	2.3 (0.8)	50	3.0 (1.0)	43	1.8 (0.4)	100	1.9 (0.7)	86	1.8 (0.7)	88	2.3 (1.2)	56	3.5 (1.0)	17	2.2 (0.9)	68
	ED	3.4 (1.1)	20	3.0 (1.4)	33	3.9 (1.1)	14	3.2 (0.8)	20	4.3 (0.9)	0	4.3 (0.9)	0	2.6 (1.2)	67	3.2 (1.5)	33	3.4 (1.2)	27
		n = 10		n = 6		n = 7		n = 5		n = 7		n = 8		n = 9		n = 6		n = 114	
Ineligible	MR	5.0 (0.0)	0	5.0 (0.0)	0	5.0 (0.0)	0	4.5 (0.7)	0	4.0 (1.4)	0	5.0 (0.0)	0	4.5 (1.0)	0	d		4.6 (0.9)	6
	LD	4.0 (0.0)		3.5 (1.3)	25	3.7 (0.8)	17	3.5 (0.7)	0	3.2 (1.3)	20	4.0 (1.0)	0	2.8 (1.0)	50			3.6 (1.0)	20
	ED	4.0 (0.0)	0	3.5 (0.6)	0	3.0 (0.9)	33	2.5 (0.7)	50	3.8 (0.4)	0	4.0 (1.7)	33	4.5 (0.6)	0			3.6 (1.0)	16
		n = 1		n = 4		n = 6		n = 2		n = 5		n = 3		n = 4				n = 60	

[a] For descriptions of each condition see Appendix A-2.

[b] Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

[c] Percentages refer to those subjects within each eligibility category who indicated that the child was likely or very likely (rating of 1 or 2) to be mentally retarded, learning disabled, and/or emotionally disturbed.

[d] In condition 16 none of the subjects declared the student ineligible for services.

Table 8.3

Percentages and Mean Ratings for Likelihood of Classification as a Function of Professional Role

Classification		Professional Role: School Psychologist (30)[a]	Special Educator (84)	School Administrator (28)	Regular Educator (58)	Support Personnel (23)	Total (223)
Mentally Retarded	% Likely	0	1	14	3	4	4
	% Unlikely	97	92	82	97	96	92
	Mean Rating[b]	4.9 (0.4)	4.7 (0.7)	4.4 (1.3)	4.7 (0.7)	4.5 (0.7)	4.7 (0.8)
Learning Disabled	% Likely	47	50	25	40	74	46
	% Unlikely	36	24	43	24	13	27
	Mean Rating	2.9 (1.2)	2.6 (1.0)	3.1 (1.0)	2.7 (1.0)	2.2 (1.0)	2.7 (1.1)
Emotionally Disturbed	% Likely	17	18	14	34	17	22
	% Unlikely	60	64	61	41	44	55
	Mean Rating	3.8 (1.1)	3.7 (1.1)	3.7 (1.0)	3.1 (1.2)	3.4 (1.1)	3.5 (1.1)

[a] Number of subjects.

[b] Mean ratings are based on a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 8.4

The Influence of Professional Role on Classification Decisions

as a Function of Eligibility Decisions

Classification		Professional Role: School Psychologist (30) $\bar{X}R$[a]	% [b]	Special Educator (84) $\bar{X}R$	%	School Administrator (28) $\bar{X}R$	%	Regular Educator (58) $\bar{X}R$	%	Support Personnel (23) $\bar{X}R$	%	Total (223) $\bar{X}R$	%
Eligible	MR	4.9 (0.3)	0	4.7 (0.7)	2	4.4 (1.0)	11	4.6 (0.8)	6	4.7 (0.5)	0	4.7 (0.7)	4
	LD	2.3 (0.9)	69	2.2 (1.0)	76	2.8 (1.0)	33	2.4 (1.0)	57	1.7 (0.6)	92	2.2 (0.9)	68
	ED	3.9 (1.2)	19	3.6 (1.2)	24	3.6 (1.1)	22	3.1 (1.2)	37	3.2 (1.2)	23	3.4 (1.2)	27
		n = 16		n = 41		n = 9		n = 35		n = 13		n = 14	
Ineligible	MR	4.7 (0.7)	0	4.8 (0.7)	0	4.3 (1.5)	14	4.8 (0.4)	0	4.0 (1.4)	25	4.6 (0.9)	6
	LD	3.9 (0.8)	9	3.4 (1.1)	25	3.4 (0.9)	21	3.4 (1.0)	13	4.0 (0.8)	0	3.6 (1.0)	20
	ED	3.5 (1.1)	18	3.8 (1.1)	13	3.9 (0.9)	7	3.3 (1.0)	27	3.5 (0.6)	0	3.6 (1.0)	16
		n = 11		n = 16		n = 14		n = 15		n = 4		n = 60	

[a] Mean ratings are based on a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

[b] Percentages refer to those subjects within each eligibility category who indicated that the child was likely or very likely (rating of 1 or 2) to be mentally retarded, learning disabled, and/or emotionally disturbed.

Table 8.5

Influence of Knowledge of Assessment on

Classification Decisions

Classification		6-10 (68)[a]	11-15 (101)	16-20 (34)	21-25 (19)	Total (222)[c]
Mentally Retarded	% Likely	4	4	3	0	4
	% Unlikely	92	91	97	100	92
	Mean Rating[b]	4.6 (0.8)	4.6 (0.8)	4.8 (0.7)	4.9 (0.2)	4.7 (0.8)
Leaning Disabled	% Likely	43	48	44	53	46
	% Unlikely	28	25	27	32	27
	Mean Rating	2.8 (1.1)	2.7 (1.1)	2.8 (0.9)	2.7 (1.2)	2.7 (1.1)
Emotionally Disturbed	% Likely	32	19	6	26	22
	% Unlikley	43	59	68	53	55
	Mean Rating	3.2 (1.3)	3.6 (1.0)	3.9 (0.9)	3.6 (1.2)	3.5 (1.1)

[a]Number of subjects.

[b]Mean ratings are calculated on the basis of a 5 point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

[c]Total N for this table is 222. There was one case with a score below 6 which was dropped from the analysis.

189

Table 8.6

Relationship Between Scores on the Pretest and Classification Decisions

As a Function of Eligibility Decision

Eligibility Classification		Pretest Score 6-10 $\bar{X}R$[a]	6-10 % [b]	11-15 $\bar{X}R$	11-15 %	16-20 $\bar{X}R$	16-20 %	21-25 $\bar{X}R$	21-25 %	Total (222) $\bar{X}R$	Total (222) %
	MR	4.6 (0.8)	5	4.7 (0.7)	4	4.8 (0.4)	0	4.9 (0.3)	0	4.7 (0.7)	4
Eligible	LD	2.4 (1.1)	59	2.2 (0.9)	67	2.1 (0.6)	92	2.1 (0.9)	73	2.2 (0.9)	68
	ED	3.1 (1.3)	34	3.5 (1.1)	27	4.1 (1.0)	8	3.5 (1.2)	27	3.4 (1.2)	27
		n = 41		n = 49		n = 13		n = 11		n = 114	
	MR	4.4 (1.2)	7	4.6 (0.8)	3	4.5 (1.2)	9	5.0 (0.0)	0	4.6 (0.9)	6
Ineligible	LD	3.6 (1.1)	7	3.5 (1.0)	23	3.3 (0.8)	18	4.2 (0.4)	0	3.6 (1.0)	20
	ED	3.6 (1.2)	29	3.6 (0.9)	10	3.9 (0.8)	0	3.2 (1.3)	40	3.6 (1.0)	16
		n = 14		n = 30		n = 11		n = 5		n = 60	

[a] Mean ratings are based on a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

[b] Percentages refer to those subjects within each eligibility category who indicated that the child was likely or very likely (rating of 1 or 2) to be mentally retarded, learning disabled, and/or emotionally disturbed.

Table 9.1

Percentages and Mean Ratings for Prognostic Decisions as a Function of Referral Information

Rating		Referral Condition[a] 1 (16)[b]	2 (16)	3 (15)	4 (13)	5 (15)	6 (14)	7 (14)	8 (14)	9 (14)	10 (12)	11 (14)	12 (11)	13 (13)	14 (13)	15 (14)	16 (13)	Total 223
Speech Problem	% Likely	0	6	13	0	20	0	7	0	7	8	7	9	8	15	21	8	8
	% Unlikely	81	56	60	80	80	79	93	79	86	67	93	82	69	54	43	69	73
	Mean Rating[c]	4.2 (0.8)	3.8 (1.0)	3.7 (1.0)	4.3 (0.8)	4.2 (1.4)	4.1 (0.7)	4.4 (0.9)	4.4 (0.9)	4.2 (0.9)	3.6 (1.6)	4.6 (0.9)	4.2 (1.3)	4.1 (1.0)	3.6 (1.3)	3.5 (1.3)	4.1 (1.0)	4.1 (1.1)
Reading Difficulties	% Likely	62	69	67	67	67	72	43	100	100	75	64	82	92	92	50	69	73
	% Unlikely	13	19	13	6	20	7	14	0	0	0	14	18	0	0	29	8	10
	Mean Rating	2.4 (0.9)	2.3 (1.2)	2.1 (1.1)	2.3 (1.0)	2.1 (1.2)	2.1 (0.9)	2.5 (1.2)	1.4 (0.5)	1.7 (0.5)	2.5 (0.9)	2.2 (0.8)	1.7 (1.3)	1.9 (0.5)	1.8 (0.6)	2.7 (1.2)	2.2 (0.8)	2.1 (1.0)
Math Difficulties	% Likely	44	44	27	20	54	57	29	50	86	50	36	36	70	70	21	15	44
	% Unlikely	25	37	60	40	33	14	42	21	7	42	36	28	15	15	36	39	31
	Mean Rating	2.9 (1.1)	2.9 (1.3)	3.4 (1.2)	3.1 (0.9)	2.6 (1.4)	2.4 (0.9)	3.1 (1.1)	2.6 (1.2)	2.1 (0.7)	2.8 (1.4)	3.1 (1.0)	2.8 (1.0)	2.3 (0.9)	2.3 (0.9)	3.1 (0.8)	3.2 (1.0)	2.8 (1.1)

[a] For descriptions of each referral condition see Appendix A-2.

[b] Number of subjects.

[c] Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 9.2

Percentages and Mean Ratings for Prognostic Decisions

as a Function of Professional Role

Rating		Professional Role: School Psychologist (30)[a]	Special Educator (84)	School Administrator (28)	Regular Educator (58)	Support Personnel (23)	Total (223)
Speech Problem	% Likely	0	14	7	3	9	8
	% Unlikely	80	63	75	86	65	73
	Mean Rating[b]	4.4 (0.8)	3.8 (1.1)	4.1 (1.1)	4.2 (1.0)	4.0 (1.2)	4.1 (1.1)
Reading Difficulties	% Likely	77	67	75	76	78	73
	% Unlikely	10	13	7	7	13	10
	Mean Rating	2.0 (0.9)	2.3 (1.0)	2.1 (1.0)	2.1 (1.0)	2.0 (1.0)	2.1 (1.0)
Math Difficulties	% Likely	60	42	32	40	40	44
	% Unlikely	23	29	39	30	30	31
	Mean Rating	2.5 (1.1)	2.9 (1.0)	3.0 (1.1)	2.8 (1.2)	2.8 (1.2)	2.8 (1.1)

[a]Number of subjects.

[b]Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 9.3

Percentages and Mean Ratings for Prognostic Decisions as a Function of Knowledge about Assessment

Rating		6-10 (68)[a]	11-15 (101)	16-20 (34)	21-25 (19)	Totals (222)
Speech Problem	% Likely	10	7	12	0	8
	% Unlikely	68	75	70	84	73
	Mean Rating[b]	3.8 (1.1)	4.1 (1.1)	4.1 (1.1)	4.4 (0.8)	4.1 (1.1)
Reading Difficulties	% Likely	69	74	73	80	73
	% Unlikely	13	11	3	10	10
	Mean Rating	2.3 (1.0)	2.1 (1.0)	2.1 (0.8)	1.9 (1.0)	2.1 (0.9)
Math Difficulties	% Likely	44	42	41	58	44
	% Unlikely	32	32	27	26	31
	Mean Rating	2.8 (1.1)	2.8 (1.1)	2.8 (1.0)	2.6 (1.2)	2.8 (1.1)

[a]Number of subjects.

[b]Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 10.1

Overall Rankings of Various Placement Alternatives

	Placement Alternatives					
Ranking	Regular Class Placement	Regular Class Consultation	Part-Time Resource Room	Full-Time Resource Room	Full-Time Special Class	Extra-School Placement
1	32 (14)	99 (44)	96 (43)	7 (3)	3 (1)	4 (2)
2	58 (26)	78 (35)	43 (19)	12 (5)	0 (0)	4 (2)
3	69 (31)	21 (10)	56 (25)	24 (11)	3 (1)	8 (4)
4	22 (10)	5 (2)	9 (4)	91 (41)	15 (7)	8 (4)
5	17 (8)	8 (4)	9 (4)	27 (12)	107 (48)	12 (5)
6	16 (7)	10 (4)	9 (4)	61 (27)	95 (43)	187 (84)
Did not rank	10 (4)	3 (1)	2 (1)	2 (1)	1 (0)	1 (0)

Note. First number indicates the number of subjects. Number in ( ) is the percentage of subjects.

Table 10.2

Number of Subjects to Rank Various Placement Alternatives as Appropriate for Each Type Child

Type of Child				Placement Alternatives					
Sex	SES	Type Problem	Appearance	Regular Class	Regular Class with Consultation	Part-time Resource Room	Full-time Resource Room	Full-time Special Class	Extra-School Placement
Male	High	Academic	Attractive	4 (40)	6 (60)	7 (70)	1 (10)	0 (0)	0 (0)
			Unattractive	7 (64)	10 (91)	5 (46)	1 (9)	1 (9)	0 (0)
		Behavior	Attractive	3 (30)	10(100)	6 (60)	0 (0)	0 (0)	0 (0)
			Unattractive	5 (56)	8 (89)	5 (56)	0 (0)	0 (0)	0 (0)
	Low	Academic	Attractive	6 (60)	8 (80)	6 (60)	1 (10)	0 (0)	3 (30)
			Unattractive	3 (30)	8 (80)	5 (50)	1 (10)	0 (0)	0 (0)
		Behavior	Attractive	2 (20)	10(100)	7 (70)	1 (10)	0 (0)	1 (10)
			Unattractive	3 (30)	7 (70)	7 (70)	2 (20)	0 (0)	0 (0)
Female	High	Academic	Attractive	1 (10)	9 (90)	9 (90)	0 (0)	0 (0)	1 (10)
			Unattractive	3 (30)	8 (80)	6 (60)	1 (10)	0 (0)	0 (0)
		Behavior	Attractive	8 (73)	10 (91)	5 (46)	0 (0)	1 (9)	0 (0)
			Unattractive	4 (50)	6 (75)	3 (38)	1 (13)	0 (0)	0 (0)
	Low	Academic	Attractive	4 (40)	8 (80)	5 (50)	2 (20)	0 (0)	0 (0)
			Unattractive	4 (40)	7 (70)	8 (80)	1 (10)	0 (0)	0 (0)
		Behavior	Attractive	5 (50)	6 (60)	8 (80)	1 (10)	0 (0)	0 (0)
			Unattractive	3 (30)	7 (70)	8 (80)	0 (0)	0 (0)	0 (0)

Note. Rankings of 1 and 2 have been grouped together.
( ) percentage of subjects within each referral condition to "place" child in various classes.

Table 10.3

Number of Subjects to Select Each Placement Alternative

As Appropriate According to Diagnostic Classification

Classification Decision	Placement Alternatives					
	Regular Class	Regular Class with Consultation	Part-Time Resource Room	Full-Time Resource Room	Full-Time Special Class	Extra-School Placement
Mental Retardation (n = 8)	1 (13)	2 (38)	2 (50)	2 (38)	0 (0)	0 (0)
Emotionally Disturbed (n = 48)	11 (35)	31 (77)	66 (52)	4 (13)	1 (4)	3 (6)
Learning Disabled (n = 103)	31 (30)	79 (77)	85 (83)	8 (8)	1 (1)	5 (5)

Note. Rankings of 1 and 2 have been grouped together.
( ) percentage of subjects within each classification type.

Table 10.4

Number of Subjects to Select Various Placement Alternatives as Appropriate Grouped According to Professional Role

Professional Role	Placement Alternatives					
	Regular Class Placement	Regular Class with Consultation	Part-Time Resource Room	Full-Time Resource Room	Full-Time Special Class	Extra-School Placement
School Psychologist (n = 30)	14 (44)	26 (87)	22 (73)	1 (3)	0 (0)	1 (3)
Special Teachers (n = 84)	34 (40)	68 (81)	54 (64)	5 (10)	3 (4)	3 (4)
School Administrators (n = 28)	10 (36)	21 (75)	16 (57)	4 (14)	1 (4)	1 (4)
Regular Teachers (n = 59)	22 (63)	44 (75)	33 (56)	6 (17)	1 (2)	2 (3)
Other Personnel (n = 23)	10 (43)	18 (78)	14 (61)	3 (13)	1 (4)	1 (4)

Note. Rankings of 1 and 2 have been grouped together.
( ) percentage of subjects within each group.

Table 10.5

Number of Subjects to Select Various Placement Alternatives as Appropriate Grouped According to Knowledge of Assessment

Level of Knowledge of Assessment	Placement Alternatives					
	Regular Class Placement	Regular Class with Consultation	Part-Time Placement Room	Full-Time Resource Room	Full-Time Special Class	Extra-School Placement
Low (n = 68)	21 (31)	54 (79)	46 (68)	9 (13)	2 (3)	1 (1)
Medium (n = 102)	42 (41)	74 (73)	61 (60)	10 (10)	4 (4)	6 (6)
Medium (n = 34)	17 (50)	31 (91)	18 (53)	0 (0)	0 (0)	0 (0)
High (n = 19)	10 (53)	17 (89)	13 (68)	0 (0)	0 (0)	1 (5)

Note. Rankings of 1 and 2 have been grouped together.
( ) percentage of subjects within each group.

Table 11.1

Percentages and Mean Ratings of Influence of Assessment Devices and Child Characteristics

Perceived Influence	Assessment Devices and Child Characteristics							
	Intelligence	Academic Achievement	Perceptual Motor	Adaptive Behavior	Personality	Behavioral Recordings	Language	Subtest Score Discrepancies
% Significant	83	91	45	50	46	60	40	52
% Insignificant	6	4	26	35	32	18	35	19
Mean Rating[a]	2.1 (0.9)	1.8 (0.8)	2.8 (1.3)	3.0 (1.4)	3.0 (1.3)	2.4 (1.2)	3.1 (1.2)	2.6 (1.0)

Perceived Influence	Intelligence Achievement Discrepancies	Sex	SES	Physical Appearance	Referral Statement
% Significant	82	7	12	11	83
% Insignificant	7	82	68	72	2
Mean Rating[a]	1.9 (1.0)	4.2 (1.0)	3.9 (1.1)	4.1 (1.0)	1.9 (0.8)

[a]Mean ratings are based on a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 11.2

Measures Perceived to be Influential as a Function of Referral Information

Measure		Referral Condition[a] (1-8)							
		1 (16)[b]	2 (16)	3 (15)	4 (15)	5 (15)	6 (14)	7 (14)	8 (14)
Intelligence	% Significant	69	75	87	33	93	93	64	93
	% Insignificant	19	6	0	27	0	7	7	0
	Mean Rating[c]	2.5 (1.2)	2.1 (1.0)	1.9 (0.6)	2.9 (1.2)	1.9 (0.6)	1.9 (0.7)	2.4 (0.7)	2.0 (0.4)
Academic Achievement	% Significant	100	94	93	74	87	93	86	100
	% Insignificant	0	0	0	13	0	7	0	0
	Mean Rating	1.7 (0.5)	1.6 (0.6)	1.6 (0.6)	2.1 (1.2)	1.8 (0.7)	1.8 (1.0)	1.9 (0.6)	1.6 (0.5)
Perceptual Motor Tests	% Significant	56	56	27	40	47	29	64	50
	% Insignificant	19	25	33	33	13	14	7	43
	Mean Rating	2.8 (1.2)	2.6 (1.3)	3.3 (1.2)	2.9 (1.4)	2.7 (0.7)	2.8 (1.2)	2.4 (1.0)	2.9 (1.5)
Adaptive Behavior	% Significant	38	50	60	60	40	62	71	35
	% Insignificant	38	25	20	20	47	14	29	58
	Mean Rating	3.2 (1.4)	3.0 (1.3)	2.8 (1.2)	2.3 (1.3)	3.3 (1.4)	2.6 (1.1)	2.7 (1.5)	3.4 (1.4)
Personality Test	% Significant	43	32	74	67	53	50	62	42
	% Insignificant	38	43	13	36	40	29	14	29
	Mean Rating	3.2 (1.4)	3.4 (1.2)	2.3 (1.3)	2.6 (1.3)	3.1 (1.4)	2.8 (1.3)	2.3 (1.1)	2.9 (1.2)
Behavioral Recordings	% Significant	31	43	87	80	46	79	93	58
	% Insignificant	28	32	0	0	27	7	7	21
	Mean Rating	2.9 (1.1)	2.9 (1.4)	1.8 (0.7)	1.9 (0.7)	2.7 (1.5)	2.1 (0.8)	1.8 (0.8)	2.6 (0.9)
Language Tests	% Significant	56	43	33	7	60	36	50	29
	% Insignificant	32	25	40	53	33	36	36	50
	Mean Rating	2.8 (1.2)	3.0 (1.2)	3.3 (1.2)	3.6 (1.0)	2.9 (1.4)	3.1 (1.3)	3.1 (1.4)	3.3 (1.0)
Subtest Score Discrepancies	% Significant	38	69	40	40	34	64	50	65
	% Insignificant	6	6	27	27	33	7	21	14
	Mean Rating	2.6 (0.7)	2.3 (0.9)	2.9 (1.2)	2.9 (1.1)	3.0 (0.8)	2.1 (0.9)	2.7 (1.1)	2.3 (1.0)
Intelligence Achievement Discrepancies	% Significant	75	88	80	67	80	86	72	79
	% Insignificant	0	0	23	0	23	7	14	7
	Mean Rating	2.1 (0.6)	1.6 (0.7)	2.1 (1.0)	2.0 (0.8)	2.0 (1.2)	1.8 (1.1)	2.1 (1.0)	2.0 (1.1)

[a] See Appendix A-2 for descriptions of each referral condition.

[b] Number of subjects.

[c] Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 11.2 (cont.)

Measures Perceived to be Influential as a Function of Referral Information

Measure		Referral Condition[a] (9-16) 9 (14)[b]	10 (12)	11 (14)	12 (11)	13 (13)	14 (13)	15 (14)	16 (13)	Total (223)
Intelligence	% Significant	93	92	79	100	92	100	79	92	83
	% Insignificant	0	0	21	0	0	0	7	0	6
	Mean Rating[c]	1.9 (0.5)	1.8 (0.7)	2.4 (1.5)	1.9 (0.3)	1.8 (0.6)	1.8 (0.4)	2.3 (0.9)	1.8 (0.6)	2.1 (0.9)
Academic Achievement	% Significant	100	84	86	90	92	100	93	92	91
	% Insignificant	0	8	14	10	8	0	0	8	4
	Mean Rating	1.6 (0.5)	1.8 (1.2)	2.1 (1.1)	1.8 (1.2)	1.8 (0.8)	1.5 (0.5)	1.8 (0.6)	1.9 (1.0)	1.8 (0.8)
Perceptual Motor Tests	% Significant	58	58	43	46	23	54	50	23	45
	% Insignificant	21	25	43	36	46	15	29	15	26
	Mean Rating	2.4 (1.3)	2.5 (1.6)	3.1 (1.6)	3.0 (1.5)	3.4 (1.4)	2.5 (1.2)	2.8 (1.3)	3.0 (0.8)	2.8 (1.3)
Adaptive Behavior	% Significant	58	50	69	55	23	8	57	46	50
	% Insignificant	35	33	23	36	62	54	29	39	35
	Mean Rating	2.6 (1.5)	2.7 (1.5)	2.3 (1.3)	3.0 (1.5)	3.9 (1.5)	3.9 (1.1)	2.8 (1.4)	3.2 (1.3)	3.0 (1.4)
Personality Test	% Significant	36	23	50	46	15	15	50	62	46
	% Insignificant	36	54	14	28	62	54	21	23	33
	Mean Rating	3.1 (1.4)	3.5 (1.1)	2.5 (1.2)	3.1 (1.3)	3.8 (1.1)	3.7 (1.1)	2.7 (1.1)	2.5 (1.2)	3.0 (1.3)
Behavioral Recordings	% Significant	58	23	86	73	31	38	72	62	60
	% Insignificant	21	46	0	9	46	31	7	15	18
	Mean Rating	2.4 (1.3)	3.4 (1.4)	1.8 (0.7)	2.1 (0.9)	3.3 (1.3)	2.8 (1.4)	2.3 (0.7)	2.4 (1.2)	2.4 (0.2)
Language Tests	% Significant	35	54	50	46	31	38	50	23	40
	% Insignificant	30	31	43	46	38	38	21	15	35
	Mean Rating	3.0 (1.4)	3.1 (1.4)	3.1 (1.6)	3.2 (1.5)	3.2 (1.1)	3.0 (1.4)	2.7 (1.3)	2.9 (0.6)	3.1 (1.2)
Subtest Score Discrepancies	% Significant	71	54	43	56	31	70	65	54	52
	% Insignificant	0	23	36	36	15	15	14	23	19
	Mean Rating	2.0 (0.8)	2.6 (1.2)	2.8 (1.2)	2.8 (1.2)	2.8 (0.7)	2.3 (1.2)	2.6 (1.2)	2.8 (1.0)	2.6 (1.0)
Intelligence Achievement Discrepancies	% Significant	93	84	79	82	92	85	93	77	52
	% Insignificant	0	8	7	18	8	15	0	8	7
	Mean Rating	1.6 (0.6)	1.8 (1.2)	1.9 (1.1)	2.3 (1.4)	1.8 (1.1)	1.9 (2.0)	1.9 (0.5)	2.2 (0.7)	1.9 (1.0)

[a] See Appendix A-2 for descriptions of each referral condition.

[b] Number of subjects.

[c] Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 11.3

Percentages and Mean Ratings of Child Characteristics Perceived to be Influential as a Function of Referral Information

Characteristic		Referral Condition[a] (n) 1 (16)[b]	2 (16)	3 (15)	4 (15)	5 (15)	6 (14)	7 (14)	8 (14)	9 (14)	10 (12)	11 (14)	12 (11)	13 (13)	14 (13)	15 (14)	16 (13)	Total (223)
Sex	% Significant	12	6	6	0	8	14	7	14	7	0	7	9	8	0	0	0	7
	% Insignificant	63	88	67	73	74	86	86	72	79	92	86	91	92	100	86	100	82
	Mean Rating[c]	4.1 (1.2)	4.1 (0.8)	4.0 (1.0)	4.2 (0.9)	4.0 (1.1)	4.4 (1.1)	4.2 (1.1)	3.9 (1.3)	4.1 (0.9)	4.1 (1.4)	4.4 (0.9)	4.2 (0.9)	4.5 (0.9)	4.8 (0.4)	4.5 (0.8)	4.8 (0.4)	4.2 (1.0)
Socioeconomic Status	% Significant	25	19	7	20	20	14	7	7	29	8	21	9	0	0	7	0	12
	% Insignificant	62	56	60	53	67	64	79	72	57	75	58	64	77	92	79	77	68
	Mean Rating	3.8 (1.2)	3.6 (1.1)	3.9 (1.0)	3.5 (1.0)	3.8 (1.1)	3.7 (1.0)	4.4 (1.0)	4.1 (1.0)	3.4 (1.1)	3.8 (1.5)	3.6 (1.3)	3.7 (0.9)	4.1 (0.8)	4.5 (0.7)	4.3 (1.0)	4.2 (0.8)	3.9 (1.1)
Physical Appearance	% Significant	19	6	7	7	7	7	7	14	14	0	29	10	0	15	21	8	11
	% Insignificant	68	88	60	73	80	79	93	65	65	85	57	45	92	62	65	77	72
	Mean Rating	3.9 (1.1)	4.2 (0.8)	3.9 (1.0)	4.0 (0.9)	4.3 (1.0)	4.1 (0.9)	4.5 (1.1)	3.9 (1.1)	3.9 (1.1)	4.4 (0.8)	3.7 (1.5)	3.7 (1.1)	4.4 (0.6)	4.0 (1.2)	3.9 (1.3)	4.2 (1.0)	4.1 (1.1)
Referral Statement of Problem	% Significant	75	81	73	80	87	86	93	69	86	86	86	91	85	100	86	77	83
	% Insignificant	6	0	0	13	0	0	0	0	0	7	0	0	0	0	7	0	2
	Mean Rating	1.9 (1.0)	1.8 (0.7)	2.1 (0.7)	2.1 (1.5)	1.8 (0.7)	1.7 (0.7)	1.8 (0.5)	2.1 (0.8)	1.8 (0.7)	2.0 (1.1)	1.7 (0.7)	1.7 (0.6)	1.9 (0.6)	1.5 (0.5)	1.9 (0.8)	2.2 (0.6)	1.9 (0.8)

[a] See Appendix A-2 for descriptions of each referral condition.

[b] Number of subjects.

[c] Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 11.4

Percentages and Mean Ratings of Measures Perceived to be Influential as a Function of Role

Measure		Professional Role: School Psychologist (30)[a]	Special Educator (84)	Administrator (28)	Regular Educator (58)	Support Personnel (23)	Total (223)
Intellectual	% Significant	94	82	75	76	96	83
	% Insignificant	3	5	11	10	0	6
	Mean Rating[b]	1.7 (0.8)	2.1 (0.8)	2.3 (1.1)	2.2 (1.0)	1.9 (0.4)	2.1 (0.9)
Academic Achievement	% Significant	90	96	89	88	88	91
	% Insignificant	3	2	0	9	6	4
	Mean Rating	1.7 (0.9)	1.8 (0.8)	1.8 (0.6)	1.9 (1.0)	1.8 (0.9)	1.8 (0.8)
Perceptual Motor Tests	% Significant	45	34	50	50	69	45
	% Insignificant	29	29	32	22	14	26
	Mean Rating	3.0 (1.3)	3.0 (1.2)	2.8 (1.5)	2.6 (1.3)	2.4 (1.2)	2.8 (1.3)
Adaptive Behavior	% Significant	38	50	46	54	57	50
	% Insignificant	34	35	32	36	35	35
	Mean Rating	3.1 (1.5)	3.0 (1.4)	3.0 (1.4)	3.9 (1.4)	3.0 (1.4)	3.0 (1.4)
Intelligence Achievement Discrepancies	% Significant	90	89	71	68	91	82
	% Insignificant	3	2	18	2	9	7
	Mean Rating	1.8 (0.8)	1.7 (0.8)	2.2 (1.2)	2.2 (1.1)	1.9 (1.1)	1.9 (1.0)
Personality Test Data	% Significant	63	36	43	53	48	46
	% Insignificant	20	37	46	26	35	32
	Mean Rating	2.5 (1.3)	3.2 (1.3)	3.2 (1.4)	2.7 (1.2)	3.0 (1.3)	3.0 (1.3)
Behavioral Recordings	% Significant	67	58	54	59	69	60
	% Insignificant	7	21	18	22	13	18
	Mean Rating	2.1 (1.0)	2.5 (1.2)	2.7 (1.3)	2.4 (1.2)	2.3 (1.0)	2.4 (1.2)
Subtest Score Discrepancies	% Significant	50	64	46	36	52	52
	% Insignificant	20	11	11	28	30	19
	Mean Rating	2.7 (1.1)	2.3 (1.0)	2.4 (1.0)	3.0 (1.0)	2.7 (1.1)	2.6 (1.0)
Scores on Language Tests	% Significant	13	42	54	42	48	40
	% Insignificant	60	27	32	34	39	35
	Mean Rating	3.8 (1.3)	3.0 (1.2)	2.8 (1.4)	3.0 (1.2)	3.1 (1.2)	3.0 (1.2)

[a] Number o. subjects.

[b] Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 11.5

Percentages and Mean Ratings of Child Characteristics Perceived as Influencing Decisions as a Function of Role

Characteristic		Professional Role					
		School Psychologist (30)[a]	Special Educator (84)	Administrator (28)	Regular Educator (58)	Support Personnel (23)	Total 223
Sex	Significant	0	10	11	3	9	7
	Insignificant	90	83	64	88	78	82
	Mean[b]	4.4 (0.7)	4.3 (1.0)	4.0 (1.1)	4.3 (1.0)	4.1 (1.1)	4.2 (1.0)
Socioeconomic Status	Significant	10	7	14	19	18	12
	Insignificant	80	68	68	57	78	68
	Mean	4.1 (1.0)	4.0 (1.0)	3.9 (1.0)	3.6 (1.2)	4.0 (1.2)	3.9 (1.1)
Physical Appearance	Significant	7	12	7	10	18	11
	Insignificant	86	69	75	66	78	72
	Mean	4.3 (1.0)	4.0 (1.1)	4.2 (1.0)	4.0 (1.0)	4.0 (1.1)	4.1 (1.0)
Referral Statement of Problem	Significant	83	81	82	87	83	83
	Insignificant	3	4	0	1	0	2
	Mean	1.9 (0.8)	2.0 (0.8)	1.8 (0.7)	1.8 (0.8)	1.9 (0.7)	1.9 (0.8)

[a] Number of subjects

[b] Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 11.6

Percentages and Mean Ratings of Measures Perceived to be Influential as a Function of Pretest Performance

Measure		Pretest Performance 6-10 (68)[a]	11-15 (101)	16-20 (34)	21-25 (19)	Total (222)
Intelligence	% Significant	82	81	82	95	83
	% Insignificant	8	6	3	5	6
	Mean Rating[b]	2.1 (0.8)	2.1 (0.9)	2.0 (0.8)	1.7 (0.9)	2.1 (0.9)
Academic Achievement	% Significant	90	90	97	95	91
	% Insignificant	6	5	0	0	4
	Mean Rating	1.9 (0.9)	1.8 (0.9)	1.7 (0.5)	1.6 (0.6)	1.8 (0.8)
Perceptual Motor Tests	% Significant	43	49	41	42	45
	% Insignificant	25	25	27	37	26
	Mean Rating	2.8 (1.2)	2.8 (1.3)	2.9 (1.3)	3.2 (1.4)	2.8 (1.3)
Adaptive Behavior	% Significant	53	51	41	44	50
	% Insignificant	28	39	41	28	35
	Mean Rating	2.8 (1.3)	3.0 (1.5)	3.3 (1.4)	2.9 (1.5)	3.0 (1.4)
Intelligence Achievement Discrepancies	% Significant	76	79	91	95	82
	% Insignificant	6	11	3	0	7
	Mean Rating	2.0 (0.9)	2.0 (1.1)	1.7 (0.7)	1.6 (0.6)	1.9 (1.0)
Personality Test Data	% Significant	53	40	44	58	46
	% Insignificant	22	37	38	32	32
	Mean Rating	2.6 (1.1)	3.1 (1.3)	3.0 (1.4)	2.9 (1.3)	3.0 (1.3)
Behavioral Recordings	% Significant	60	57	73	58	60
	% Insignificant	15	23	15	5	18
	Mean Rating	2.3 (1.1)	2.6 (1.3)	2.2 (1.1)	2.3 (0.8)	2.4 (1.2)
Subtest Score Discrepancies	% Significant	50	54	56	42	52
	% Insignificant	24	16	18	21	19
	Mean Rating	2.7 (1.0)	2.5 (1.0)	2.5 (1.1)	2.8 (1.9)	2.6 (1.0)
Scores on Language Tests	% Significant	49	43	32	11	40
	% Insignificant	23	36	38	63	35
	Mean Rating	2.8 (1.0)	3.1 (1.3)	3.2 (1.3)	4.0 (1.1)	3.1 (1.2)

[a] Number of subjects.

[b] Mean ratings are calculated on the basis of a five point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 11.7

Percentages and Mean Ratings of Child Characteristics Perceived to be Influential as a Function of Pretest Performance

Characteristic		Pretest Performance 6-10 (68)[a]	11-15 (101)	16-20 (34)	21-25 (19)	Total (222)
Sex	% Significant	4	10	6	0	7
	% Insignificant	88	78	79	89	82
	Mean Rating[b]	4.4 (0.8)	4.2 (1.1)	4.3 (0.9)	4.3 (0.7)	4.2 (1.0)
Socioeconomic Status	% Significant	16	15	3	5	12
	% Insignificant	63	63	71	84	68
	Mean Rating	3.7 (1.0)	3.9 (1.2)	4.1 (0.9)	4.1 (0.8)	3.9 (1.7)
Physical Appearance	% Significant	21	9	3	0	11
	% Insignificant	58	75	76	95	72
	Mean Rating	3.7 (1.2)	4.1 (1.0)	4.3 (1.0)	4.5 (0.6)	4.1 (1.0)
Referral Statement of Problem	% Significant	87	82	79	84	83
	% Insignificant	0	3	0	5	2
	Mean Rating	1.8 (0.6)	1.9 (0.8)	2.0 (0.6)	1.9 (0.8)	1.9 (0.8)

[a]Number of subjects.

[b]Mean ratings are calculated on the basis of a five-point Likert scale with 1 = very likely and 5 = very unlikely. Numbers in parentheses are standard deviations.

Table 12.1

Estimated Number of Handicapped Children Served and Unserved by Type of Handicap[a]

Type of Handicap	Percent of Child Population[b]	Percent Served (1975)	Percent Unserved (1975)
Speech-Impaired	3.5	81	19
Mentally Retarded	2.3	83	17
Learning Disabled	3.0	12	88
Emotionally Disturbed	2.0	18	82
Crippled and Other Health Impaired	0.5	72	28
Deaf	.075	71	29
Hard of Hearing	.5	18	82
Visually Handicapped	.1	59	41
Deaf-Blind and Other Multihandicapped	.6	33	67

[a]Source: U.S. Office of Education, Bureau of Education for the Handicapped, 1975.

[b]Percent of the total population of children in 1975.

Table 12.2

Percentage of School-Aged Children Served by Handicapping Condition During 1977-78 Nationally and for the State of Minnesota

Handicapping Condition	National	Minnesota
Speech Impaired	2.39	2.33
Learning Disabled	1.89	2.75
Mentally Retarded	1.84	1.61
Emotionally Disturbed	.56	.38
Other Health Impaired	.27	.15
Orthopedically Impaired	.17	.12
Deaf and Hard of Hearing	.17	.14
Visually Handicapped	.07	.06
Total	7.36	7.54

Table 12.3

Estimated Ranges of Prevalence and Estimated Number Receiving Special Education Services as Reported in the Literature

Handicap	Range
Mental Retardation	1.3 - 2.3
Emotionally Disturbed	1.2 - 2.0
Learning Disabled	1.0 - 3.0
Speech and Language Impaired	2.4 - 4.0
Hearing Impaired	.3 - .5
Deaf	.075 - .19
Visually Handicapped	.05 - .16
Orthopedically Handicapped	.1 - .75
Other Health Impaired	.1 - .75

Note: All reported figures are percentages.

Source: Personal communication from Lou Danielson of the Bureau of Education for the Handicapped.

Table 12.4

Number and Percentage of Selected Types of Children with Various Handicapping Conditions

Type of Handicap	Types of Children		
	Minority	Male	Female
Mental Retardation	N = 267,590 % = 3	N = 370,363 % = 2	N = 238,852 % = 1
Learning Disability	N = 244,354 % = 2	N = 712,193 % = 3	N = 265,889 % = 1
Speech	N = 192,846 % = 2	N = 530,775 % = 3	N = 310,347 % = 1

Note: In the general population, the total number of minority children was reported as 10,399,584 (25%), the total for males was 21,349,640 (51%), and the total for females was 20,390,490 (49%).
Source: Office of Civil Rights.

Table 12.5

Means and Standard Deviations for Professionals' Estimates of Various Handicapping Conditions in Minority Children*

Handicapping Conditions	Roles					
	School Psychologist	Special Educator	Administrator	Regular Educator	Other Support Personnel	Total
Academic Difficulties	29.5	26.5	32.4	30.4	27.7	28.8
	18.5	19.6	27.3	25.2	22.2	22.3
Behavior Problems	18.7	21.5	21.7	24.9	22.9	22.2
	15.7	19.1	20.9	22.4	20.9	20.0
Emotional Disturbance	8.6	12.6	14.0	16.1	14.7	13.4
	10.2	17.2	17.1	17.3	19.1	16.7
Learning Disabilities	12.3	16.6	15.7	21.1	19.1	17.4
	9.2	17.9	19.2	19.0	18.1	17.6
Mental Retardation	6.1	6.5	4.5	6.6	5.0	6.1
	7.2	9.8	5.0	10.9	6.9	9.0
Physical Handicaps	2.9	5.7	2.7	5.8	4.5	4.9
	2.6	7.9	2.8	8.1	7.4	7.0
Sensory Impairments	4.2	7.1	5.9	6.6	7.8	6.5
	5.2	10.5	7.0	8.1	10.8	8.9
Speech and Language Difficulties	12.4	15.6	17.6	17.8	14.9	15.9
	14.1	17.5	23.9	18.8	20.8	18.6

*All data are reported in percentages

Note. Upper numerals represent means, lower numerals represent standard deviations.

Table 12.6

Means and Standard Deviations for Professionals' Estimates of Various Handicapping Conditions in Low SES Children*

Handicapping Conditions	Roles					
	School Psychologist	Special Educator	Administrator	Regular Educator	Other Support Personnel	Total
Academic Difficulties	27.8	24.9	26.8	32.0	31.4	28.0
	13.1	16.8	16.6	23.6	25.3	19.4
Behavior Problems	19.9	19.3	16.7	28.5	25.4	22.1
	13.4	17.6	13.2	23.8	22.9	19.5
Emotional Disturbance	10.4	11.8	14.8	18.9	19.1	14.6
	12.6	13.7	15.0	18.5	23.4	16.5
Learning Disabilities	13.6	13.6	12.7	21.2	21.0	16.2
	9.9	13.2	15.1	19.0	21.2	16.0
Mental Retardation	5.5	7.4	4.9	6.5	7.2	6.6
	5.4	11.7	3.7	7.5	10.8	9.2
Physical Handicaps	3.5	4.8	3.5	5.6	6.1	4.8
	4.7	6.8	3.2	7.5	10.3	6.9
Sensory Impairments	4.4	5.5	4.7	8.2	10.7	6.5
	5.3	8.0	4.7	10.5	14.1	9.1
Speech and Language Difficulties	10.8	14.3	12.8	19.7	17.2	15.4
	9.3	16.0	15.2	21.2	20.6	17.4

*All data are reported in percentages

Note. Upper numerals represent means, lower numerals represent standard deviations.

Table 12.7

Means and Standard Deviations for Professionals' Estimates of Various Handicapping Conditions for High Socioeconomic Status Children

Handicapping Conditions	Roles					
	School Psychologist	Special Educator	Administrator	Regular Educator	Other Support Personnel	Total
Academic Difficulties	11.3	11.3	10.9	12.3	11.7	11.6
	7.4	9.9	6.7	9.2	9.4	9.0
Behavior Problems	11.5	11.4	11.3	14.5	11.3	12.2
	6.2	11.5	9.4	10.7	7.8	10.1
Emotional Disturbance	7.9	8.2	7.2	10.1	8.7	8.6
	8.6	9.2	5.7	8.6	6.4	8.3
Learning Disabilities	7.3	8.7	6.7	10.1	9.5	8.7
	5.0	7.9	5.2	8.5	5.0	7.3
Mental Retardation	2.7	4.5	3.1	4.5	3.3	4.0
	2.4	6.4	2.3	5.9	2.9	5.2
Physical Handicaps	3.2	3.6	3.0	5.0	3.1	3.8
	3.3	4.2	2.8	5.6	2.7	4.3
Sensory Impairments	3.2	4.2	3.4	5.5	5.9	4.5
	3.1	5.1	4.0	5.9	8.6	5.5
Speech and Language Difficulties	6.1	6.9	6.1	7.4	6.2	6.8
	4.8	7.6	4.7	7.1	5.2	6.6

*All data are reported in percentages

Note. Upper numerals represent means, lower numerals represent standard deviations.

Table 12.8

Means and Standard Deviations for Professionals' Estimates of Various Handicapping Conditions for Boys

Handicapping Conditions	Roles					
	School Psychologist	Special Educator	Administrator	Regular Educator	Other Support Personnel	Total
Academic Difficulties	17.4	20.2	18.5	19.3	19.0	19.2
	8.5	16.5	18.6	13.7	12.1	14.7
Behavior Problems	16.3	17.5	14.7	21.4	17.0	18.0
	7.7	18.9	16.6	18.2	15.2	17.0
Emotional Disturbance	5.6	9.5	9.9	10.2	9.2	9.2
	3.7	12.8	16.7	8.8	10.3	11.4
Learning Disabilities	9.5	14.2	11.3	14.7	14.9	13.4
	5.6	14.7	16.0	13.4	12.7	13.5
Mental Retardation	4.2	6.7	5.6	3.8	5.9	5.4
	5.4	11.7	12.9	4.0	10.1	9.5
Physical Handicaps	2.5	4.1	3.8	4.7	5.7	4.2
	2.2	5.4	9.3	7.2	10.5	6.8
Sensory Impairments	3.7	4.9	4.2	5.1	7.6	5.0
	3.9	5.9	9.4	5.3	11.4	6.8
Speech and Language Difficulties	7.6	9.7	15.5	10.3	11.3	10.1
	5.4	10.4	19.9	11.5	14.7	12.2

*All data are reported in percentages

Note. Upper numerals represent means, lower numerals represent standard deviations.

Table 12.9

Means and Standard Deviations for Professionals' Estimates of Various Handicapping Conditions for Girls

Handicapping Conditions	Roles					
	School Psychologist	Special Educator	Administrator	Regular Educator	Other Support Personnel	Total
Academic Difficulties	11.6	10.4	8.8	12.6	12.7	11.2
	5.2	8.1	6.0	9.4	9.5	8.2
Behavior Problems	9.4	8.4	6.2	10.1	10.2	8.9
	6.6	11.0	6.3	8.7	9.6	9.3
Emotional Disturbance	6.4	7.1	5.2	7.8	8.0	7.0
	7.0	8.5	5.2	7.5	9.0	7.8
Learning Disabilities	5.9	7.1	4.1	9.0	7.5	7.1
	3.4	8.0	2.4	8.0	8.9	7.3
Mental Retardation	2.8	4.5	4.2	4.3	5.0	4.2
	2.1	5.4	9.1	6.5	10.1	6.6
Physical Handicaps	2.4	4.0	4.0	4.4	5.6	4.0
	2.1	5.6	9.5	6.1	10.1	
Sensory Impairments	3.2	4.2	4.4	5.1	7.4	4.8
	3.8	5.6	9.6	6.0	11.2	6.9
Speech and Language Difficulties	5.4	6.8	5.3	6.6	7.6	6.5
	3.7	8.0	4.8	5.6	8.9	6.7

*All data are reported in percentages

Note. Upper numerals represent means, lower numerals represent standard deviations.

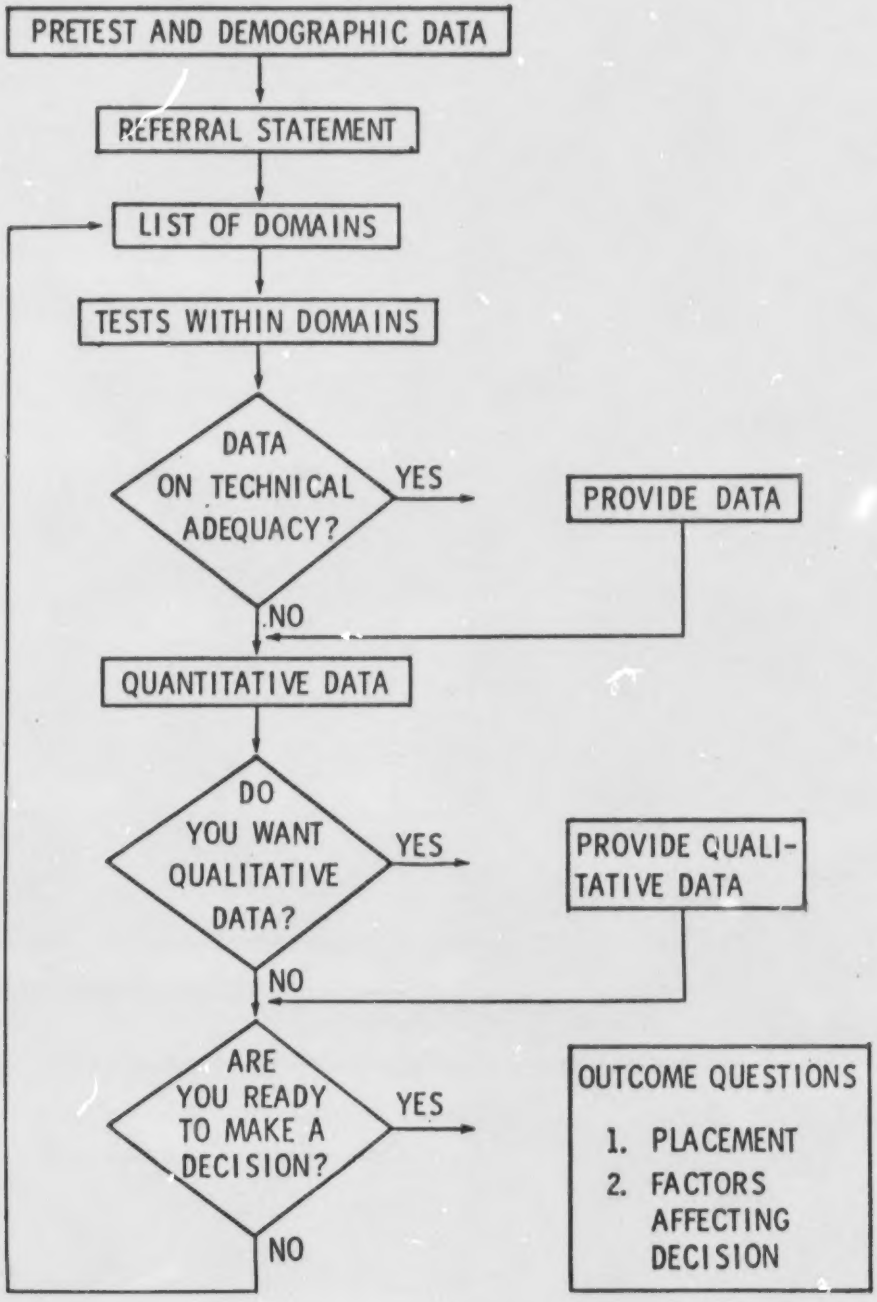

Figure 2-1. Flow chart of steps in the computer-simulated assessment and decision-making program.

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Research Report No. 34

TECHNICAL SUPPLEMENT FOR COMPUTER-SIMULATED INVESTIGATIONS OF THE PSYCHOEDUCATIONAL ASSESSMENT AND DECISION-MAKING PROCESS

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OVERVIEW

This report is a supplement to Research Report No. 32 and Research Report No. 33, both of which presented data from a major investigation of the psychoeducational assessment and decision-making process. The investigation used a computer simulation methodology that relied on extensive technical software to provide subjects with a realistic exercise in assessment and decision making.

The technical software of the computerized investigation is included here, along with some additional data tables that were too extensive to include in the original reports. This document will be most meaningful to the reader when used in conjunction with Research Reports 32 and 33.

Appendix A contains materials used during the computer simulation exercise, including the pretest, referral statements, assessment domains and devices, and outcome questions, as well as examples of technical and qualitative information provided to subjects in the simulated decision-making exercise.

Appendix B contains information on the sequence of the diagnostic simulation program, including examples of specific directions to subjects.

Appendix C provides examples of the student's scores on assessment devices that were provided to subjects.

Appendix D contains figures and tables that present representative data of school psychologists' estimates of the percentages of children with various handicapping conditions as well as summary data on estimates as a function of knowledge of assessment and professional role.

Appendix E presents the actual case folder information presented to subjects in each of the 16 referral conditions.

APPENDIX A

Development of the Computer Simulation Program

Appendix A-1

Assessment Pretest

1. There is a -.90 correlation between the score on two tests. This means that

   (a) a person's score is in the lowest 90%
   (b) 90 times out of 100, the person's score will be below average
   (c) a person who scores high on one test will score high on the other
   (d) a person who scores high on one test will score low on the other

2. Predictive and concurrent validity are both types of what kind of validity?

   (a) face
   (b) criterion related
   (c) construct
   (d) content

3. A teacher wishes to determine a child's ability to learn. Which of the following measures would be most appropriate for the task?

   (a) Wide Range Achievement Test
   (b) WISC
   (c) PIAT
   (d) Blackie

4. On the basis of your own experience, indicate the percentage of minority children who evidence the following handicaps:

   1. Academic Difficulties_____
   2. Behavior Problems_____
   3. Emotional Disturbance_____
   4. Learning Disabilities_____
   5. Mental Retardation_____
   6. Physical Handicaps_____
   7. Sensory Impairments_____
   8. Speech and Language Difficulties_____

5. Factors to be considered in the assessment of an individual are

   (a) current life circumstances
   (b) developmental history
   (c) extrapersonal factors
   (d) a and b
   (e) all of the above

2a

6. Which of the following devices is a group measure of intellectual functioning?

   (a) Nebraska Test of Learning Aptitude
   (b) Woodcock-Johnson Psychoeducational Battery
   (c) Henmon-Nelson Tests of Mental Abilities
   (d) b and c
   (e) a and b

7. If the reliability of an intelligence test is .50 and if the number of the same kinds of items is doubled, the reliability would

   (a) increase
   (b) decrease
   (c) remain the same
   (d) change but which way is difficult to say

8. The Wechsler intelligence scales employ a differential scoring system for some of the subtests. Which of the following subtests is scored pass-fail

   (a) Comprehension
   (b) Responses for the information
   (c) Similarities
   (d) Vocabulary

9. On the basis of your own experience, indicate the percentage of children from lower socioeconomic status families who evidence the following handicaps?

   1. Academic Difficulties_____
   2. Behavior Problems_____
   3. Emotional Disturbance_____
   4. Learning Disabilities_____
   5. Mental Retardation_____
   6. Physical Handicaps_____
   7. Sensory Impairments_____
   8. Speech and Language Difficulties_____

10. Why are median scores often used as opposed to means?

   (a) They're easier to find
   (b) They have more consentual validity
   (c) A person will score better
   (d) It disregards extreme scores

11. Educational personnel typically assess perceptual-motor skills for

(a) prevention
(b) remediation
(c) differential diagnosis
(d) none of the above
(e) all of the above

12. Most intelligence tests

(a) tend to emphasize material typically studies in school
(b) are fair to Blacks and to other minorities
(c) are not culture bound
(d) both b and c

13. On the basis of your own experience, indicate the percentage of children from higher socioeconomic status families who evidence the following handicaps:

1. Academic Difficulties_____
2. Behavior Problems_____
3. Emotional Disturbance_____
4. Learning Disabilities_____
5. Mental Retardation_____
6. Physical Handicaps_____
7. Sensory Impairments_____
8. Speech and Language Difficulties_____

14. Confidence intervals are used in educational test interpretations because

(a) all tests are somewhat unreliable
(b) raw scores are difficult to interpret
(c) these tests are based on interval scales of measurement
(d) the results of these tests are consistent

15. Analytic or fluid ability is tested in many nonverbal devices through the use of

(a) figure analogies and block designs
(b) number series
(c) quantitative reasoning
(d) computation and factual knowledge

16. Rich earns a score on the Stanford-Binet ($\bar{X}$ = 100, S = 16) of 68. This performance is most accurately described as

(a) 1 1/2 SD below the mean
(b) at the 2nd percentile
(c) modal
(d) 1.85 above the mean

17. Which is not a type of reliability estimate?

(a) split-half
(b) test-retest
(c) internal consistency
(d) relative
(e) parallel form

18. On the basis of your own experience, indicate the percentage of boys who evidence the following handicaps:

1. Academic Difficulties_____
2. Behavior Problems _____
3. Emotional Disturbance_____
4. Learning Disturbance_____
5. Mental Retardation_____
6. Physical Handicaps_____
7. Sensory Impairments_____
8, Speech and Language Difficulties _____

19. The difference between S-B and WISC-R is

(a) S-B is an age scale and WISC-R is a point scale
(b) S-B is norm referenced and WISC-R is criterion referenced
(c) only fiction. They're the same test with different publishers
(d) The WISC-R has but one score to report while the S-B reports a verbal and performance score

20. Which of these correlation coefficients has the poorest predictive value?

(a) .90
(b) .12
(c) -.52
(d) -1.00

21. The most common measure of position and central tendency is the

(a) percentile rank
(b) arithmetic mean
(c) mode
(d) median

22. A pupil's test score should be compared to test norms only when the standardization group from which the norms were developed

(a) is very large
(b) is representative of the nation at large
(c) is a homogeneous group
(d) resembles the pupil on many salient characteristics

23. The 60th percentile is the point in a distribution

(a) where a student has answered 60 percent of the questions correctly
(b) which marks the distance from the median that includes 60% of the cases
(c) below which are 40% of the cases
(d) below which are 60% of the cases

24. If a test measures something consistently but does not measure what it is supposed to measure, then the test is

(a) reliable but not valid
(b) reliable but not standardized
(c) standardized but not reliable
(d) valid but not reliable

25. On the basis of your own experience, indicate the percentage of girls who evidence the following handicaps:

1. Academic Difficulties_____
2. Behavior Problems_____
3. Emotional Disturbance_____
4. Learning Disabilities_____
5. Mental Retardation_____
6. Physical Handicaps_____
7. Sensory Impairments_____
8. Speech and Language Difficulties_____

26. The difference between scores on two tests is usually

(a) more reliable than the reliabilities of either test
(b) less reliable than the reliabilities of either test
(c) about the same as either test
(d) irrelevant to educators who don't ever use that kind of information

27. The majority of the empirical research on perceptual-motor tests indicates that

(a) the tests are very reliable
(b) the tests are technically adequate
(c) for the most part the devices are neither theoretically nor technically sound
(d) a and b

28. Which of the following is a group administered criterion referenced test that assesses multiple skills?

    (a) Silent Reading Diagnostic Test
    (b) Key Math Diagnosis
    (c) Gilmore Oral Reading Test
    (d) none of the above
    (e) all of the above

29. A test in which the child is required to copy 9 geometric designs is the

    (a) Developmental Test of Visual Perception
    (b) Goodenough-Harris
    (c) Thematic Apperception Test
    (d) Bender Visual-Motor Gestalt Test

30. Which of the following tests cannot be administered to a 9 year-old child?

    (a) Illinois Test of Psycholinguistic Abilities
    (b) Bender-Gestalt
    (c) Denver Development Screening
    (d) Blind Learning Aptitude Test

Appendix A-2

Referral Statements

1. William is an attractive ten year old (10-4); he is currently in fifth grade (5-2). He has been referred by his classroom teacher because he is experiencing academic problems in school. William's father is a bank vice president and has agreed to have him evaluated for possible special class placement.

2. William is an attractive ten year old (10-4); he is currently in fifth grade (5-2). He has been referred by his classroom teacher because he is experiencing academic problems in school. William's father is a janitor at the local bank and has agreed to have him evaluated for possible special class placement.

3. William is an attractive ten year old (10-4); he is currently in fifth grade (5-2). He has been referred by his classroom teacher because he is experiencing behavior problems in school. William's father is a bank vice president and has agreed to have him evaluated for possible special class placement.

4. William is an attractive ten year old (10-4); he is currently in fifth grade (5-2). He has been referred by his classroom teacher because he is experiencing behavior problems in school. William's father is a janitor at the local bank and has agreed to have him evaluated for possible special class placement.

5. William is an unattractive ten year old (10-4); he is currently in fifth grade (5-2). He has been referred by his classroom teacher because he is experiencing academic problems in school. William's father is a bank vice president and has agreed to have him evaluated for possible special class placement.

6. William is an unattractive ten year old (10-4); he is currently in fifth grade (5-2). He has been referred by his classroom teacher because he is experiencing academic problems in school. William's father is a janitor at the local bank and has agreed to have him evaluated for possible special class placement.

7. William is an unattractive ten year old (10-4); he is currently in fifth grade (5-2). He has been referred by his classroom teacher because he is experiencing behavior problems in school. William's father is a bank vice president and has agreed to have him evaluated for possible special class placement.

8. William is an unattractive ten year old (10-4); he is currently in fifth grade (5-2). He has been referred by his classroom teacher because he is experiencing behavior problems in school. William's father is a janitor at the local bank and has agreed to have him evaluated for possible special class placement.

9. Phyllis is an attractive ten year old (10-4); she is currently in fifth grade (5-2). She has been referred by her classroom teacher because she is experiencing academic problems in school. Phyllis' father is a bank vice president and has agreed to have her evaluated for possible special class placement.

10. Phyllis is an attractive ten year old (10-4); she is currently in fifth grade (5-2). She has been referred by her classroom teacher because she is experiencing academic problems in school. Phyllis' father is a janitor at the local bank and has agreed to have her evaluated for possible special class placement.

11. Phyllis is an attractive ten year old (10-4); she is currently in fifth grade (5-2). She has been referred by her classroom teacher because she is experiencing behavior problems in school. Phyllis' father is a bank vice president and has agreed to have her evaluated for possible special class placement.

12. Phyllis is an attractive ten year old (10-4); she is currently in fifth grade (5-2). She has been referred by her classroom teacher because she is experiencing behavior problems in school. Phyllis' father is a janitor at the local bank and has agreed to have her evaluated for possible special class placement.

13. Phyllis is an unattractive ten year old (10-4); she is currently in fifth grade (5-2). She has been referred by her classroom teacher because she is experiencing academic problems in school. Phyllis' father is a bank vice president and has agreed to have her evaluated for possible special class placement.

14. Phyllis is an unattractive ten year old (10-4); she is currently in fifth grade (5-2). She has been referred by her classroom teacher because she is experiencing academic problems in school. Phyllis' father is a janitor at the local bank and has agreed to have her evaluated for possible special class placement.

15. Phyllis is an unattractive ten year old (10-4); she is currently in the fifth grade (5-2). She has been referred by her classroom teacher because she is experiencing behavior problems in school. Phyllis' father is a bank vice president and has agreed to have her evaluated for possible special class placement.

16. Phyllis is an unattractive ten year old (10-4); she is currently in the fifth grade (5-2). She has been referred by her classroom teacher because she is experiencing behavior problems in school. Phyllis' father is a janitor at the local bank and has agreed to have her evaluated for possible special class placement.

Assessment Devices

Achievement Tests

(CAT)	California Achievement Test
(ITBS)	Iowa Test of Basic Skills
(MAT)	Metropolitan Achievement Test
(SAT)	Stanford Achievement Test
(GMRT)	Gates-McGinitie Reading Tests
(PIAT)	Peabody Individual Achievement Test
(WRAT)	Wide Range Achievement Test
(GORT)	Gray Oral Reading Test
(GORLT)	Gilmore Oral Reading Test
(GMRDT)	Gates-McKillop Reading Diagnostic Test
(DARD)	Durrell Analysis of Reading Difficulty
(SDRT)	Stanford Diagnostic Reading Test
(DRS)	Diagnostic Reading Scales
(WRMT)	Woodcock Reading Mastery Tests
(KMDAT)	Key Math Diagnostic Arithmetic Test
(SDMT)	Stanford Diagnostic Mathematics Test
(DIAM)	Diagnosis: An Instructional Aid in Mathematics

Intelligence Tests

(SBIS)	Stanford-Binet Intelligence Scale
(WISCR)	Wechsler Intelligence Scale for Children - Revised
(SIT)	Slosson Intelligence Test
(MSCA)	McCarthy Scales of Children's Abilities
(FRPVT)	Full-Range Picture Vocabulary Test
(QKT)	Quick Test
(PPVT)	Peabody Picture Vocabulary Test
(GHDT)	Goodenough-Harris Drawing Test
(HNTMA)	Henmon-Nelson Tests of Mental Ability
(KAIT)	Kuhlmann-Anderson Intelligence Tests
(OLMAT)	Otis-Lennon Mental Ability Test
(PMAT)	Primary Mental Abilities Test

Perceptual-Motor Tests

(BVMGT)	Bender Visual-Motor Gestalt Test
(DTVP)	Developmental Test of Visual Perception
(MFDT)	Memory for Designs Test
(DTVMI)	Developmental Test of Visual-Motor Integration
(PPMS)	Purdue Perceptual-Motor Survey

Language Tests

(GFTA)	Goldman-Fristoe Test of Articulation
(ADT)	Auditory Discrimination Test
(NSST)	Northwestern Syntax Screening Test
(ITPA)	Illinois Test of Psycholinguistic Abilities

Adaptive Behavior Scales

(ABS)	AAMD Adaptive Behavior Scale
(ABSPS)	AAMD Adaptive Behavior Scale - P.S. Version
(VSMS)	Vineland Social Maturity Scale

Behavioral Recordings

(FCER)	Frequency Counting or Event Recording
(ITY)	Interval of Time Sampling
(PPR)	Permanent Products
(PQBPC)	Peterson-Quay Behavior Problem Checklist

Personality Tests

(PHCSCS)	Piers-Harris Children's Self-Concept Scale
(RIBT)	Rorschach-Inkblot Technique
(SAM)	School Apperception Method
(TAT)	Thematic Apperception Test

Examples of Technical and Qualitative Information

California Achievement Test (CAT)

Technical Manual Information

This test is designed for the measurement, evaluation, and analysis of school achievement, emphasizing the content and objectives in the basic curricular areas of reading, mathematics, and language. Raw scores can be used to provide both classroom and individual data, including percentile ranks and grade equivalents. The test was normed on about 203,000 students in a nationwide stratified random sample of school districts. The latest manual contains no reliability or validity data.

Qualitative Information

The child had some difficulty completing all items on several subtests within the time limits. The teacher observed that the child did not appear to be attending intensively to the required activities.

Wechsler Intelligence Scale for Children - Revised (WISC-R)

Technical Manual Information

This test is a measure of intellectual ability of subjects aged six through 16 in both verbal and performance areas. Among the behaviors sampled by the test are comprehending verbal directions, understanding societal mores, and defining words. Raw scores may be transformed into scaled scores, and verbal, performance, and full-scale IQs. Scoring of specific subtest items differs among subtests from a simple pass-fail to weighted scores. Some subtests are timed, with extra credit given for faster responses. The test was standardized on a demographically-stratified sample of 2200 children, aged 6 1/2 to 16 1/2. Split-half reliabilities ranged from .62 to .92 for subtests and from .89 to .96 for IQs. Validity

data were obtained in three concurrent validity studies, with correlations ranging from .60 to .95.

Qualitative Information

Rapport was difficult to establish. The child's level of attention to task was quite variable and could not be specifically attributed to verbal or performance subtests. The child responded to all tasks; some guessing was evident. Behavior observed during testing suggested a moderate level of anxiety. As the difficulty of items within specific subtests increased, the child demonstrated noticeable distractibility.

The child's best performances were on tasks requiring the sequential arrangement of pictures to tell a story, ability to analyze and respond appropriately to various social situations, and the identification of common elements between two objects or items. Performance on other subtests was considered typical.

Purdue Perceptual-Motor Survey (PPMS)

Technical Manual Information

This survey, designed to assess perceptual-motor abilities of children in the early grades, has 22 scorable items grouped into five areas: balance and posture, body image and differentiation, perceptual-motor match, ocular control, and form perception. Numbers assigned as scores are subjective and reflect the quality of a child's perceptual-motor behaviors. The survey was normed on 50 children at each of the first four grades. Only children free of motor defects were included; the actual range of achievement and intelligence in the sample was not reported. Although one study validated the survey by demonstrating that

the norming sample performed at a significantly higher level than a grade- and age-matched clinic sample, additional studies failed to show that performance on the survey increased with grade level or socio-economic level.

Qualitative Information

Performance on the 11 subtests was below average but not significantly so. Balance and posture subtest performance, especially on tasks requiring walking a balance beam and jumping on one foot indicated some lack of postural flexibility. Adequately developed bilateralization and limited rhythmic control. Child demonstrated good knowledge of body parts but had some difficulty imitating movements. On a frustrating writing task, considerable frustration was noted as was inhibited rhythmic flow. Ocular control was adequate as evidenced by good convergence of the eyes in focusing on objects. Adequate form perception was demonstrated but some difficulty was noted in reproducing geometric designs.

Goldman-Fristoe Test of Articulation (GFTA)

Technical Manual Information

This test is an individually administered, criterion-referenced device intended to assess competence in the articulation of consonant sounds in simple and complex contexts. The test has three parts: sounds-in-words, sounds-in-sentences, and stimulability (used to estimate the response of a child making articulation errors to therapy). Teachers may administer the device provided they score only the number of errors; if types of errors are to be categorized, a speech or language therapist should administer the device. Three types of reliability are reported: test-retest

reliability was .95 for sounds-in-words, and .94 for sounds-in-sentences; interrater reliability was .92 for the presence of error and .88 for the type of error; intrarater reliability was .91. The validity of the tests rests on its content validity.

Qualitative Information

No additional qualitative information available.

Vineland Social Maturity Scale (VSMS)

Technical Manual Information

This device is designed to assess a person's social competence, for subjects from birth to age 30. The scale is administered as a structured interview to someone who is familiar with the subject. The interviewer's task is to determine whether the subject habitually and customarily performs certain acts. Eight aspects of social competence, such as self-help eating, locomotion and communication, are assessed through the rating of 117 behaviors. Behaviors are scored using variations of passing and failing scores; these may be added and transformed into social ages and social quotients. The scale was normed on 620 white subjects from the greater Vineland, New Jersey area in 1935. Individuals with educational, mental, or physical handicaps were excluded from the sample. Test-retest reliability data reported range from .57 to .92. The validity of the scale rests on content analysis and correlations of ratings of social competence made by persons familiar with the subject and social ages derived from the scales (correlations were generally over .80).

Qualitative Information

No additional qualitative information available.

Interval or Time Sampling (ITY)

Technical Manual Information

In this method of recording behavior, the observer or teacher records whether or not a particular behavior occurs in a given time interval. It is particularly useful for behaviors that are continuous, ones that do not have a clear beginning or end (for example, out of seat, on task, works independently, social interactions). The recorder may observe a student every minute to see if he/she is working. If at any period of time during that interval the student does work, "working" is recorded in that interval. This method is generally less time-consuming than frequency counting and may be more reliable. However, it provides estimates of rates rather than actual rates.

Qualitative Information

Child was observed to be on task, defined as doing required work at the right time, on the average of 78% of the time. In seat behavior averaged 88% of time sampled.

School Apperception Method (SAM)

Technical Manual Information

This method involves showing children from kindergarten to grade nine 22 drawings (12 basic plus 10 additional ones that may be substituted or added) of school children and school personnel in a variety of situations. The pictures are intended to encourage stories about relations with teachers, principals, and schoolmates, attitudes toward school work; anger, aggression, and other similar themes. The manual does not give a scoring procedure. No information on norms, reliability, or validity is provided.

16a

Qualitative Information

Some distractibility was evident and child was very concerned about performance, asking several times, "Did I do OK?"

Appendix A-5

Outcome Questions

1. To what extent do you believe the child is eligible for special education services?

Very Likely				Very Unlikely
1	2	3	4	5

2. To what extent is this child mentally retarded?

Very Likely				Very Unlikely
1	2	3	4	5

3. To what extent is this child learning disabled?

Very Likely				Very Unlikely
1	2	3	4	5

4. To what extent is child emotionally disturbed?

Very Likely				Very Unlikely
1	2	3	4	5

5. To what extent does this child demonstrate a speech problem?

Very Likely				Very Unlikely
1	2	3	4	5

6. To what extent is this child likely to have difficulty acquiring reading skills?

Very Likely				Very Unlikely
1	2	3	4	5

7. To what extent is this child likely to have difficulty acquiring mathematics skills?

Very Likely				Very Unlikely
1	2	3	4	5

8. Which of the following, in rank order, would be the most appropriate placement in which to serve this child?

_____ Regular class

_____ Regular class with consultation by resource teacher

_____ Part time resource room

_____ Full time resource room

_____ Full time special class

_____ Extra-school setting

9. Rate the extent to which each of the following affected your decisions.

a. Scores on intellectual measures

Very Significant Effect		Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2		3	4	5

b. Scores on measures of academic achievement

Very Significant Effect		Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2		3	4	5

c. The child's sex

Very Significant Effect		Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2		3	4	5

d. The child's socioeconomic status

Very Significant Effect		Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2		3	4	5

e. Scores on perceptual-motor tests

Very Significant Effect	Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2	3	4	5

f. Adaptive behavior

Very Significant Effect	Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2	3	4	5

g. Discrepancies between expected and actual achievement

Very Significant Effect	Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2	3	4	5

h. Personality test data

Very Significant Effect	Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2	3	4	5

i. The child's physical appearance

Very Significant Effect	Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2	3	4	5

j. Behavioral recordings

Very Significant Effect	Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2	3	4	5

k. Referral statement of problem

Very Significant Effect	Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2	3	4	5

l. Subtest score discrepancies

Very Significant Effect	Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2	3	4	5

m. Scores on language tests

Very Significant Effect	Significant Effect		Insignificant Effect	Very In-Significant Effect
1	2	3	4	5

APPENDIX B

Methodology

Appendix B-1

Sequence of Participation in

Diagnostic Simulation

Stage 1. Pretest of assessment knowledge was provided for each subject.

Stage 2. Brief introduction to the simulation project was presented. It took a form similar to the following:

> "You are going to participate in a diagnostic simulation."
>
> "We realize that this is a somewhat artificial setting, but would like you to try to react and make decisions as you do in the real-life settings in which you work. You will be presented assessment information taken from an actual case file; you will be able to control the extent of the information and its form by responding to the question you will see here. When you are ready to begin, press the space bar."

Stage 3. A case folder containing one of the referral statements (selected at random) was presented. It was given a brief introduction:

> "The child you will be making placement and classification decisions about was referred by his classroom teacher."
>
> "After reviewing the case folder, you will have an opportunity to collect and review additional information."
>
> "Indicate you are ready to proceed by entering the child's address below."

See Referral Statements in Appendix A-2.

Stage 4. The subject was instructed to proceed with collecting additional information:

"Different types of information are available for this child."

"Please indicate which type of information you would like to have first."

Stage 5. The list of categories of information was presented:

___ Intelligence Test Scores
___ Achievement Test Scores
___ Perceptual-Motor Test Scores
___ Behavioral Recordings
___ Personality Test Scores
___ Adaptive Behavior Scale Scores
___ Language Test Scores

Stage 6. After the subject selected a category of information, the list of actual devices within that category was presented.

See List of Devices in Appendix A-3.

Stage 7. If the subject wanted a technical description of the device selected, it was presented from the appropriate archive.

Stage 8. If the subject did not want a technical description of the device selected, the child's performance scores for that device were presented.

Stage 9. If the subject wanted qualitative information about the performance scores, it was presented from the appropriate archive.

Stage 10. If the subject was ready to make his/her final decision, outcome questions were presented.

If the subject was not ready to make his/her final decision, the program returned to Stage 5, presented the list of categories of assessment information, and continued.

See Outcome Questions in Appendix A-5.

APPENDIX C

Test Usage in Computer-Simulated Decision Making

Appendix C-1

Examples of Quantitative Data for Assessment Devices

California Achievement Test (CAT)	G.E. 3.7
Vocabulary	3.1
Comprehension	3.1
Mathematics Computation	4.9
Mathematics Concepts	4.8
Mathematics Problems	5.0
Language Mechanics	3.4
Language Usage and Structure	4.1
Language Spelling	3.2

Wechsler Intelligence Scale for Children-Revised (WISC-R)	F.S. 92
Verbal IQ 98	Performance IQ 89
Information	8
Comprehension	9
Similarities	10
Arithmetic	7
Vocabulary	8
Digit Span	8
Picture Completion	9
Picture Arrangement	12
Block Design	8
Object Assembly	7
Coding	8
Mazes	7

Purdue Perceptual-Motor Survey (PPMS)	
Balance and Posture	average
Body Image and Differentiation	average
Perceptual Motor Match	below average
Ocular Control	below average
Form Perception	average

2c

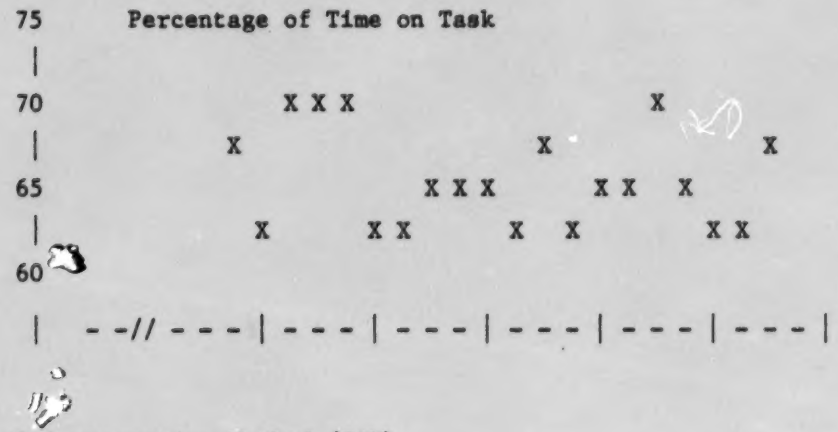
Goldman-Fristoe Test of Articulation (GFTA)

Sounds-in-words	W/R and R/L substitutions
Sounds-in-sentences	W/R and R/L substitutions
Stimulability	good

Vineland Social Maturity Scale (VSMS)

The child's performance showed no major problems in social adjustment or adaptive behavior; most skills were considered average.

Interval Recording and Time Sampling (IRY)



School Apperception Method (SAM)

The child's performance was essentially like that expected of a ten year old, although definite instances of immaturity were noted. Only the ten basic pictures were used, as defensiveness was evidenced by non-elaborative responses. Considerable insecurity in group (i.e., reading in class) situations noted.

APPENDIX D

Expectations for Various Handicapping Conditions

Frequency Distributions for School Psychologists

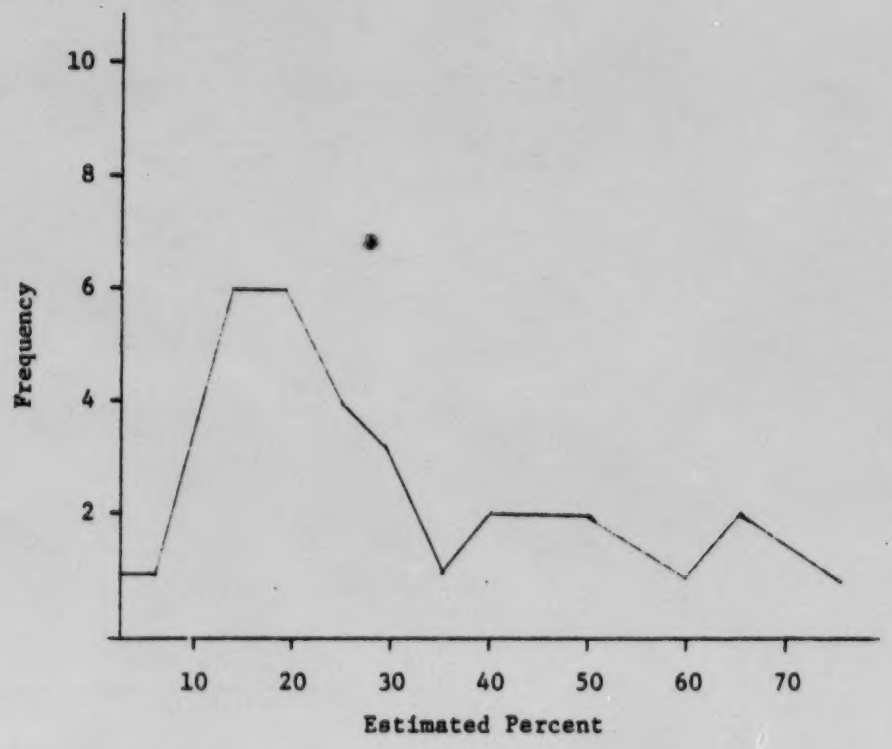


Figure 1 School Psychologists' Estimates of Percentages of Minority Students with Academic Difficulties.

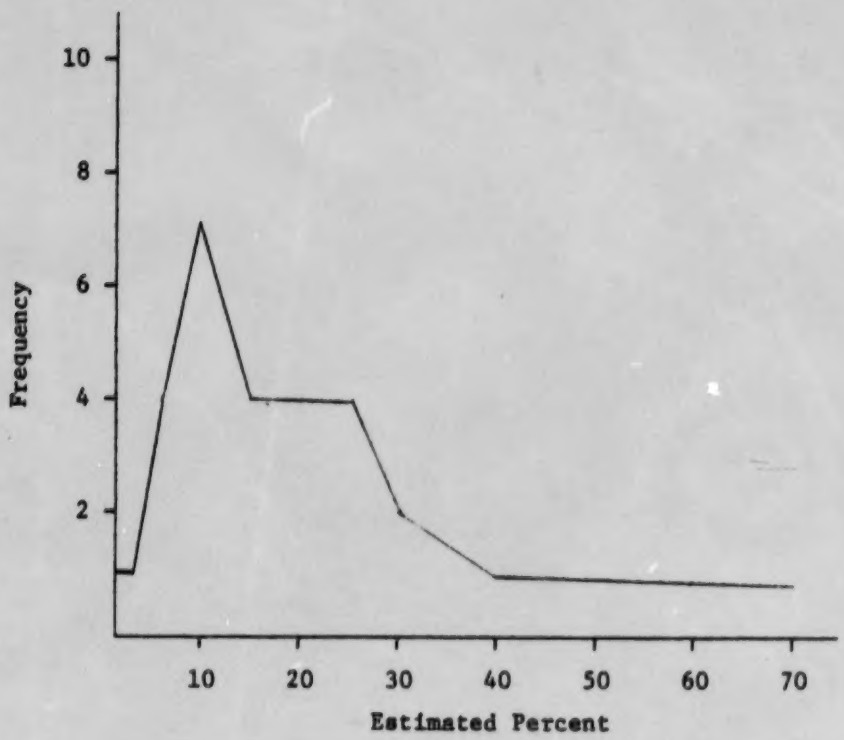


Figure 2 School Psychologists' Estimates of Percentages of Minority Students with Behavior Problems.

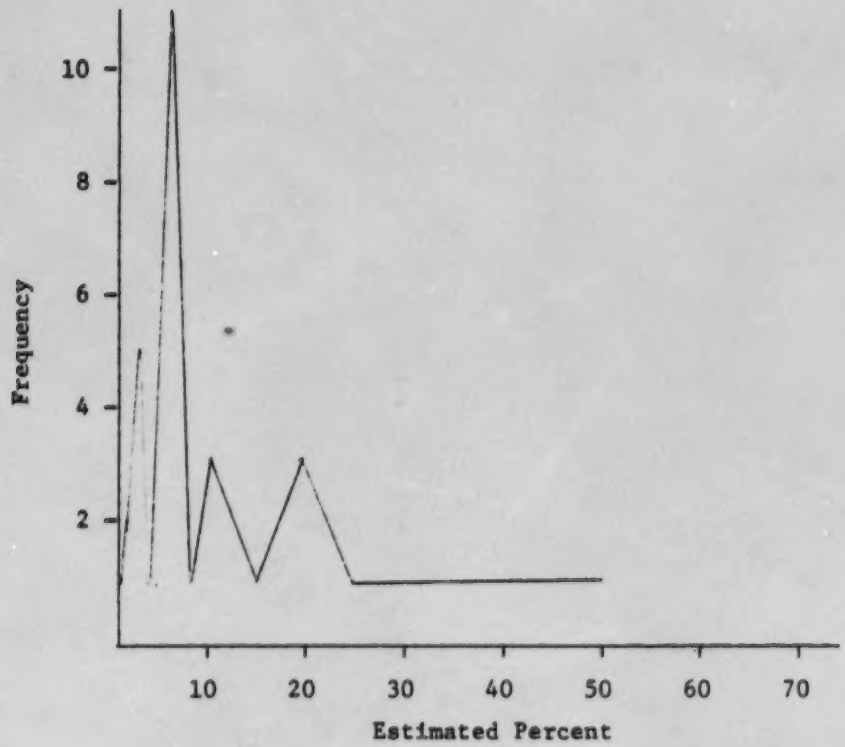


Figure 3 School Psychologists' Estimates of Percentage of Minority Students with Emotional Disturbance.

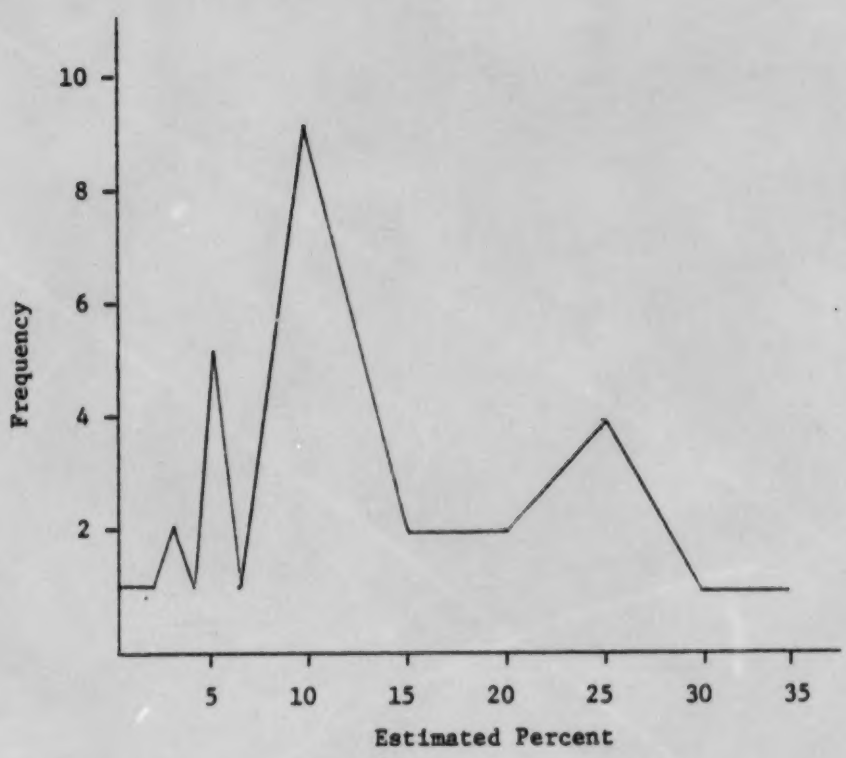


Figure 4 School Psychologists' Estimates of Percentages of Minority Students with Learning Disabilities.

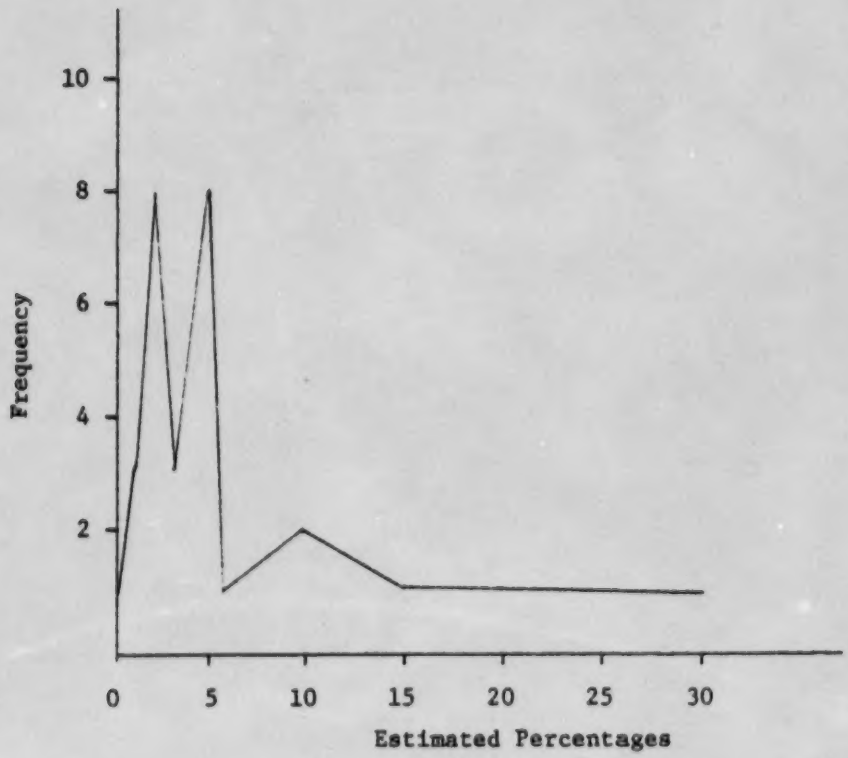


Figure 5 School Psychologists' Estimates of Percentages of Minority Students with Mental Retardation.

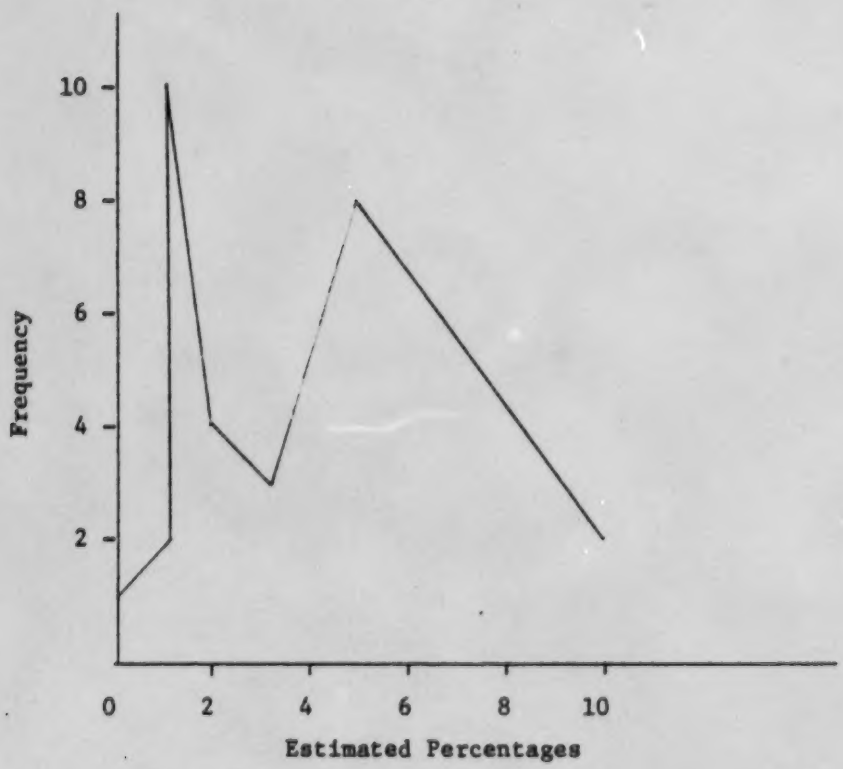


Figure 6 School Psychologists' Estimates of Percentages of Minority Students with Physical Handicaps

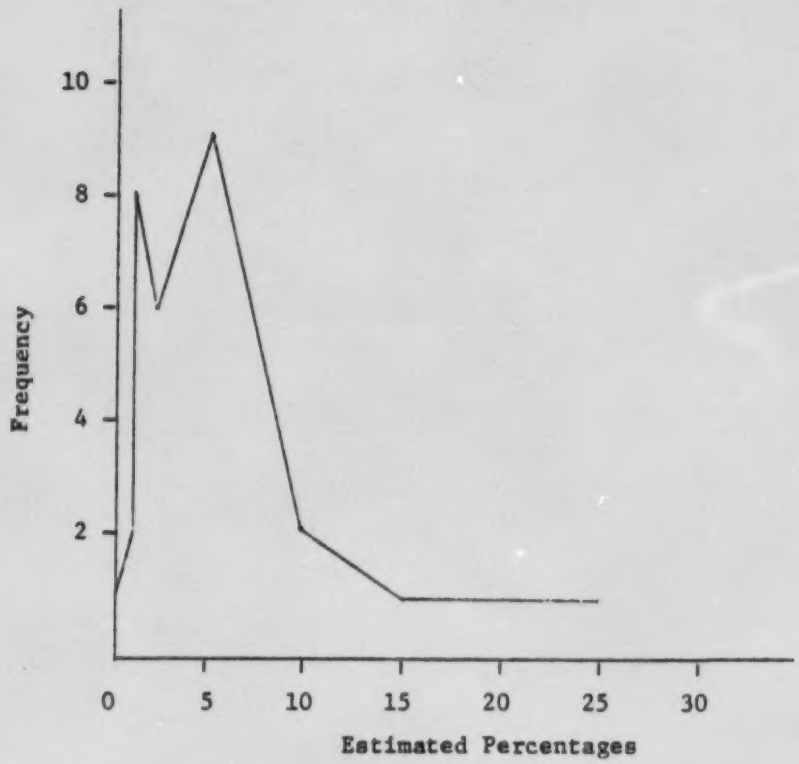


Figure 7 School Psychologists' Estimates of Percentages of Minority Students with Sensory Impairment

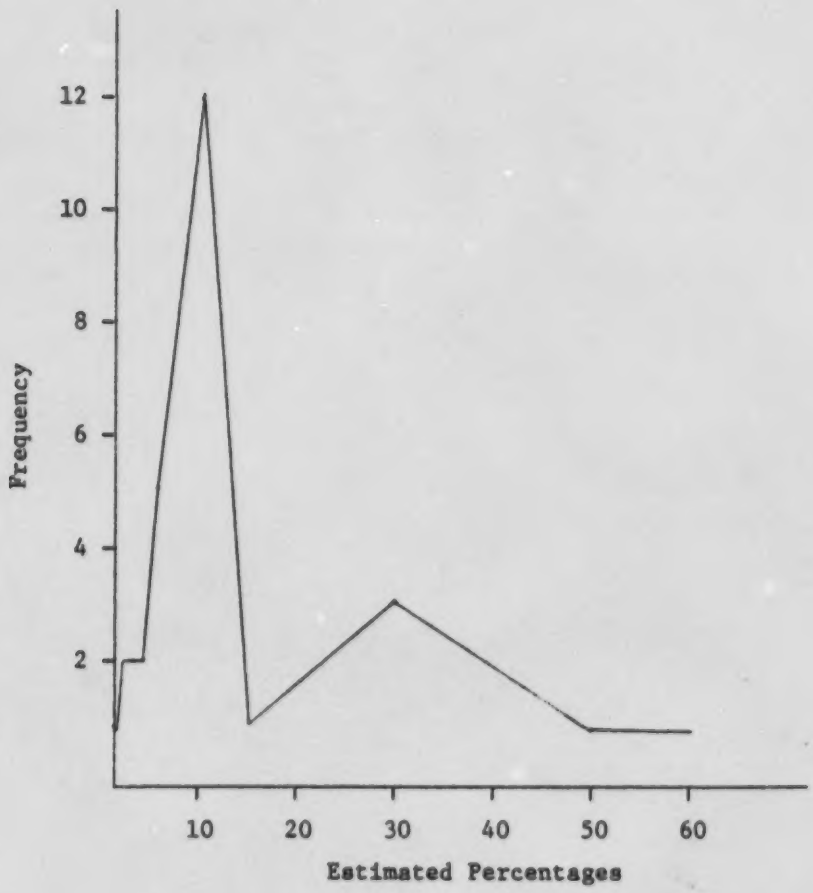


Figure 8 School Psychologists' Estimates of Percentages of Minority Students with Speech and Language Difficulties

Appendix D-2

Estimates as a Function of Professional Role and

Knowledge of Assessment

Table A

Means, Standard Deviations, and Number of Cases
for Minority Children with Academic Difficulties

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N=30		$\bar{X}$=41.2	$\bar{X}$=37.9	$\bar{X}$=23.9
$\bar{X}$=29.5		S=27.5	S=20.6	S=14.0
S=18.5		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$=30.1	$\bar{X}$=26.8	$\bar{X}$=21.6	
$\bar{X}$=26.8	S=24.1	S=17.9	S=14.6	
S=19.5	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$=48.3	$\bar{X}$=30.7	$\bar{X}$=30.0	
$\bar{X}$=32.4	S=14.4	S=29.6	S=24.7	
S=27.3	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$=30.5	$\bar{X}$=30.2		
$\bar{X}$=30.4	S=25.3	S=25.5		
S=25.2	N=32	N=27		
Other Support				
N=23	$\bar{X}$=27.4	$\bar{X}$=31.8	$\bar{X}$=19.2	
$\bar{X}$=27.7	S=27.6	S=20.8	S=18.4	
S=22.2	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=28.9 S=22.2

Table B

Means, Standard Deviations, and Number of Cases
for Minority Children with Behavior Problems

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=18.2	$\bar{X}$=22.1	$\bar{X}$=17.6
$\bar{X}$= 18.8		S=16.1	S=18.2	S=15.4
S= 15.7		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$=23.1	$\bar{X}$=23.7	$\bar{X}$=14.7	
$\bar{X}$=21.8	S=23.8	S=17.2	S=14.2	
S=15.7	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$=48.3	$\bar{X}$=16.2	$\bar{X}$=25.8	
$\bar{X}$=21.7	S=17.6	S=15.9	S=27.7	
S=20.9	N= 3	N=19	N= 6	
Regular Educators				
N=58	$\bar{X}$=26.7	$\bar{X}$=22.5		
$\bar{X}$=24.9	S=23.9	S=20.7		
S=22.4	N=32	N=26		
Other Support				
N= 23	$\bar{X}$=24.0	$\bar{X}$=26.4	$\bar{X}$=13.6	
$\bar{X}$=22.9	S=27.3	S=20.1	S=11.6	
S=20.9	N= 7	N=11	N= 5	
Total for entire population	N=222	$\bar{X}$=22.3	S=19.9	

Table C

Means, Standard Deviations, and Number of Cases
for Minority Children with Emotional Disturbance

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N=30		$\bar{X}$=16.7	$\bar{X}$= 8.0	$\bar{X}$= 7.1
$\bar{X}$=8.6		S=22.4	S= 5.8	S= 7.4
S=10.2		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$=16.3	$\bar{X}$=12.6	$\bar{X}$= 7.4	
$\bar{X}$=12.8	S=23.4	S=14.6	S= 9.7	
S=17.3	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$=28.3	$\bar{X}$=11.4	$\bar{X}$=15.2	
$\bar{X}$=14.0	S=31.8	S=14.7	S=15.9	
S=17.1	N= 3	N=19	N= 6	
Regular Educators				
N=58	$\bar{X}$=15.8	$\bar{X}$=16.5		
$\bar{X}$=16.1	S=19.2	S=15.0		
S=17.3	N=32	N=26		
Other Support				
N=23	$\bar{X}$=19.7	$\bar{X}$=15.7	$\bar{X}$= 5.4	
$\bar{X}$=14.7	S=27.7	S=16.2	S= 5.5	
S=19.0	N= 7	N=11	N= 5	

Total for entire population N=222 $\bar{X}$=13.4 S=16.7

Table D

Means, Standard Deviations, and Number of Cases
for Minority Children with Learning Disabilities

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=17.0	$\bar{X}$=16.9	$\bar{X}$= 9.6
$\bar{X}$=12.3		S=12.6	S=10.8	S= 7.1
S= 9.2		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$=22.8	$\bar{X}$=14.2	$\bar{X}$=14.1	
$\bar{X}$=16.8	S=25.0	S=11.5	S=16.3	
S=17.9	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$=18.3	$\bar{X}$=16.4	$\bar{X}$=12.0	
$\bar{X}$=15.7	S= 7.6	S=22.7	S= 8.7	
S=19.2	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$=24.2	$\bar{X}$=17.4		
$\bar{X}$=21.1	S=21.7	S=14.7		
S=19.0	N=32	N=27		
Other Support				
N=23	$\bar{X}$=22.4	$\bar{X}$=20.1	$\bar{X}$=12.2	
$\bar{X}$=19.1	S=26.2	S=14.9	S=11.8	
S=18.1	N= 7	N=11	N= 5	
Total for entire population	N=223	$\bar{X}$=17.4	S=9.2	

Table E

Means, Standard Deviations, and Number of Cases
for Minority Children with Mental Retardation

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 3.7	$\bar{X}$=12.1	$\bar{X}$= 4.4
$\bar{X}$= 6.1		S= 4.3	S=11.4	S= 4.4
S= 7.2		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$=10.1	$\bar{X}$= 5.1	$\bar{X}$= 4.8	
$\bar{X}$= 6.6	S=15.7	S= 4.8	S= 4.6	
S= 9.8	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 5.3	$\bar{X}$= 3.9	$\bar{X}$= 6.2	
$\bar{X}$= 4.5	S= 4.5	S= 4.5	S= 7.0	
S= 5.0	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$= 6.8	$\bar{X}$= 6.4		
$\bar{X}$= 6.6	S=12.1	S= 9.5		
S=10.9	N=32	N=27		
Other Support				
N= 23	$\bar{X}$= 6.3	$\bar{X}$= 5.3	$\bar{X}$= 2.4	
$\bar{X}$= 5.0	S= 6.3	S= 8.7	S= 1.7	
S= 6.9	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=6.1 S=9.0

Table F

Means, Standard Deviations, and Number of Cases
for Minority Children with Physical Handicaps

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 4.5	$\bar{X}$= 4.2	$\bar{X}$= 2.1
$\bar{X}$= 2.9		S= 4.0	S= 3.2	S= 1.7
S= 2.6		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$= 8.3	$\bar{X}$= 4.6	$\bar{X}$= 4.7	
$\bar{X}$= 5.8	S=12.3	S= 4.2	S= 5.6	
S= 8.0	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 5.3	$\bar{X}$= 2.0	$\bar{X}$= 3.8	
$\bar{X}$= 2.7	S= 4.5	S= 2.0	S= 3.4	
S= 2.8	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$= 6.4	$\bar{X}$= 5.1		
$\bar{X}$= 5.8	S= 9.6	S= 6.0		
S= 8.1	N=32	N=27		
Other Support				
N= 23	$\bar{X}$= 8.0	$\bar{X}$= 3.7	$\bar{X}$= 2.0	
$\bar{X}$= 4.5	S=12.2	S= 4.2	S= .7	
S= 7.4	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=4.9 S=7.0

Table G

Means, Standard Deviations, and Number of Cases
for Minority Children with Sensory Impairment

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 3.7	$\bar{X}$= 7.6	$\bar{X}$= 3.0
$\bar{X}$= 4.2		S= 4.2	S= 9.1	S= 2.6
S= 5.2		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$=10.5	$\bar{X}$= 5.4	$\bar{X}$= 6.3	
$\bar{X}$= 7.2	S=15.3	S= 5.8	S=10.0	
S= 10.5	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 7.0	$\bar{X}$= 5.3	$\bar{X}$= 7.0	
$\bar{X}$= 5.9	S= 5.2	S= 7.1	S= 8.0	
S= 7.0	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$= 7.7	$\bar{X}$= 5.4		
$\bar{X}$= 6.6	S= 9.3	S= 6.1		
S= 8.1	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=14.0	$\bar{X}$= 5.7	$\bar{X}$= 3.6	
$\bar{X}$= 7.8	S=17.8	S= 4.3	S= 3.8	
S= 10.8	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=6.5 S=8.9

Table H

Means, Standard Deviations, and Number of Cases
for Minority Children with Speech and Language Difficulties

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=17.7	$\bar{X}$=17.1	$\bar{X}$= 9.5
$\bar{X}$= 12.4		S=14.6	S=21.1	S=10.6
S= 14.1		N= 4	N= 7	N=19.0
Special Educators				
N= 83	$\bar{X}$=19.1	$\bar{X}$=15.7	$\bar{X}$=10.8	
$\bar{X}$= 15.8	S=23.0	S=15.0	S=12.4	
S= 17.5	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$=18.3	$\bar{X}$=14.4	$\bar{X}$=27.3	
$\bar{X}$= 17.6	S= 7.6	S=22.2	S=33.8	
S= 23.9	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$=16.6	$\bar{X}$=19.1		
$\bar{X}$= 17.8	S=17.6	S=20.4		
S= 18.8	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=17.3	$\bar{X}$=16.4	$\bar{X}$= 8.6	
$\bar{X}$= 15.0	S=28.0	S=21.0	S= 6.1	
S= 20.8	N= 7	N=11	N= 5	
Total for entire population	N=223	$\bar{X}$=16.0	S=18.6	

Table I

Means, Standard Deviations, and Number of Cases
for Low SES with Academic Difficulties

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=35.0	$\bar{X}$=31.4	$\bar{X}$=25.0
$\bar{X}$= 27.8		S= 5.8	S=15.9	S=12.7
S= 13.1		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$=26.9	$\bar{X}$=24.7	$\bar{X}$=23.5	
$\bar{X}$= 25.2	S=20.7	S=15.5	S=12.1	
S= 16.6	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$=34.4	$\bar{X}$=24.5	$\bar{X}$=30.2	
$\bar{X}$= 26.8	S= 5.1	S=19.0	S=10.6	
S= 16.6	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$=30.1	$\bar{X}$=34.0		
$\bar{X}$= 31.9	S=26.1	S=20.6		
S= 23.6	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=42.1	$\bar{X}$=32.7	$\bar{X}$=13.6	
$\bar{X}$= 31.4	S=30.4	S=24.3	S= 7.2	
S= 25.2	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=28.1 S=19.4

Table J

Means, Standard Deviations, and Number of Cases
for Low SES with Behavior Problems

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=27.5	$\bar{X}$=22.6	$\bar{X}$=17.4
$\bar{X}$= 19.9		S=22.2	S=14.4	S=10.8
S= 13.4		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$=19.6	$\bar{X}$=20.8	$\bar{X}$=15.9	
$\bar{X}$= 19.5	S=19.7	S=17.4	S=14.8	
S= 17.6	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$=31.7	$\bar{X}$=14.0	$\bar{X}$=17.5	
$\bar{X}$= 16.7	S= 7.6	S=13.8	S= 8.8	
S= 13.2	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$=27.8	$\bar{X}$=29.3		
$\bar{X}$= 28.5	S=24.3	S=23.7		
S= 23.8	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=32.3	$\bar{X}$=28.4	$\bar{X}$= 9.0	
$\bar{X}$= 25.4	S=23.8	S=25.0	S= 4.2	
S= 22.9	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=22.2 S=19.4

Table K

Means, Standard Deviations, and Number of Cases
for Low SES with Emotional Disturbance

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N=30		$\bar{X}$=31.2	$\bar{X}$= 8.6	$\bar{X}$= 6.7
$\bar{X}$=10.4		S=22.9	S= 6.1	S= 6.7
S=12.6		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$=14.5	$\bar{X}$=11.9	$\bar{X}$= 7.6	
$\bar{X}$=11.9	S=18.2	S=11.8	S= 8.1	
S=13.7	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$=23.3	$\bar{X}$=13.2	$\bar{X}$=15.5	
$\bar{X}$=14.8	S=15.3	S=15.9	S=12.6	
S=15.0	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$=15.9	$\bar{X}$=22.6		
$\bar{X}$=18.9	S=17.1	S=19.7		
S=18.5	N=32	N=27		
Other Support				
N=23	$\bar{X}$=20.1	$\bar{X}$=24.7	$\bar{X}$= 5.4	
$\bar{X}$=19.1	S=25.0	S=26.4	S= 3.6	
S=23.4	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=14.7 S=16.5

Table L

Means, Standard Deviations, and Number of Cases
for Low SES with Learning Disabilities

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=26.2	$\bar{X}$=15.4	$\bar{X}$=10.3
$\bar{X}$= 13.6		S=17.0	S= 8.3	S= 6.1
S= 9.9		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$=16.5	$\bar{X}$=13.0	$\bar{X}$=11.4	
$\bar{X}$= 13.8	S=16.4	S=11.3	S=11.9	
S= 13.2	N=26	N=41	N= [illegible]	
Administrator				
N= 28	$\bar{X}$=18.3	$\bar{X}$=12.6	$\bar{X}$=10.0	
$\bar{X}$= 12.7	S= 7.6	S=17.8	S= 6.0	
S= 15	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$=21.7	$\bar{X}$=20.5		
$\bar{X}$= 21.2	S=19.4	S=19.0		
S= 19.0	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=21.4	$\bar{X}$=26.5	$\bar{X}$= 7.8	
$\bar{X}$= 20.9	S=20.9	S=24.6	S= 2.3	
S= 21.2	N= 7	N=11	N= 5	
Total for entire population	N=223	$\bar{X}$=16.3	S=16.0	

Table M

Means, Standard Deviations, and Number of Cases
for Low SES with Mental Retardation

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 5.0	$\bar{X}$= 9.0	$\bar{X}$= 4.3
$\bar{X}$= 5.5		S= 3.6	S= 9.7	S= 2.8
S= 5.4		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$= 9.6	$\bar{X}$= 6.8	$\bar{X}$= 5.7	
$\bar{X}$= 7.5	S=17.5	S= 8.7	S= 6.1	
S=11.8	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$= 7.0	$\bar{X}$= 4.3	$\bar{X}$= 6.0	
$\bar{X}$= 4.9	S= 5.2	S= 3.5	S= 3.5	
S= 3.7	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$= 5.7	$\bar{X}$= 7.4		
$\bar{X}$= 6.5	S= 7.4	S= 7.7		
S= 7.5	N=32	N=27		
Other Support				
N=23	$\bar{X}$= 7.6	$\bar{X}$= 9.0	$\bar{X}$= 2.6	
$\bar{X}$= 7.2	S= 6.5	S=14.8	S= 1.1	
S=10.8	N= 7	N=11	N= 5	
Total for entire population	N=223	$\bar{X}$= 6.6	S= 9.2	

Table N

Means, Standard Deviations, and Number of Cases
for Low SES with Physical Handicaps

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 3.7	$\bar{X}$= 6.9	$\bar{X}$= 2.2
$\bar{X}$= 3.5		S= 4.2	S= 8.5	S= 1.6
S= 4.7		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$= 6.4	$\bar{X}$= 3.9	$\bar{X}$= 4.7	
$\bar{X}$= 4.8	S=10.3	S= 4.0	S= 5.6	
S= 6.8	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 7.0	$\bar{X}$= 2.9	$\bar{X}$= 3.7	
$\bar{X}$= 3.5	S= 5.2	S= 2.9	S= 1.7	
S= 3.2	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$= 5.4	$\bar{X}$= 5.9		
$\bar{X}$= 5.6	S= 6.9	S= 8.2		
S= 7.5	N=32	N=27		
Other Support				
N= 23	$\bar{X}$= 6.7	$\bar{X}$= 7.3	$\bar{X}$= 2.6	
$\bar{X}$= 6.1	S= 5.2	S=14.4	S= 1.3	
S=10.3	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=4.8 S=6.9

Table O

Means, Standard Deviations, and Number of Cases
for Low SES with Sensory Impairment

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 2.2	$\bar{X}$= 7.4	$\bar{X}$= 3.8
$\bar{X}$= 4.4		S= 1.9	S= 9.2	S= 3.3
S= 5.2		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$= 5.9	$\bar{X}$= 4.9	$\bar{X}$= 6.7	
$\bar{X}$= 5.6	S=10.8	S= 5.4	S= 8.6	
S= 8.0	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 7.0	$\bar{X}$= 4.1	$\bar{X}$= 5.7	
$\bar{X}$= 4.7	S= 5.2	S= 5.0	S= 3.7	
S= 4.7	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$= 9.6	$\bar{X}$= 6.6		
$\bar{X}$= 8.2	S=12.8	S= 6.7		
S=10.5	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=12.6	$\bar{X}$=12.9	$\bar{X}$= 3.2	
$\bar{X}$=10.7	S=14.6	S=16.5	S=16.5	
S=14.1	N= 7	N=11	N=11	

Total for entire population N=223 $\bar{X}$=6.5 S=9.1

Table P

Means, Standard Deviations, and Number of Cases
for Low SES with Speech and Language

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=12.5	$\bar{X}$=16.0	$\bar{X}$= 8.6
$\bar{X}$= 10.8		S= 6.5	S=15.3	S= 6.1
S= 9.3		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$=20.6	$\bar{X}$=11.0	$\bar{X}$=13.5	
$\bar{X}$= 14.5	S=23.5	S= 8.8	S=13.1	
S= 16.0	N=26	N=41	N=16	
Administrator				
N= 27	$\bar{X}$=10.0	$\bar{X}$=13.6	$\bar{X}$=11.4	
$\bar{X}$= 12.8	S= 8.7	S=17.6	S= 8.1	
S= 15.2	N= 3	N=19	N= 5	
Regular Educators				
N= 59	$\bar{X}$=15.3	$\bar{X}$=25.0		
$\bar{X}$= 19.7	S=15.9	S=25.4		
S= 21.2	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=25.7	$\bar{X}$=16.6	$\bar{X}$= 6.6	
$\bar{X}$= 17.2	S=30.6	S=16.0	S= 3.6	
S= 20.6	N= 7	N=11	N= 5	

Total for entire population N=222 $\bar{X}$=15.5 S=17.4

Table Q

Means, Standard Deviations, and Number of Cases
for High SES with Academic Problems

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N=30		$\bar{X}$= 7.0	$\bar{X}$=13.6	$\bar{X}$=11.3
$\bar{X}$=11.3		S= 8.9	S= 8.0	S= 6.8
S= 7.4		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$= 9.1	$\bar{X}$=13.3	$\bar{X}$=10.5	
$\bar{X}$=14.5	S= 7.2	S=11.4	S= 9.3	
S= 9.3	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$=10.0	$\bar{X}$=10.4	$\bar{X}$=13.3	
$\bar{X}$=11.1	S= 8.7	S= 6.4	S= 7.5	
S= 6.7	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$=11.4	$\bar{X}$=13.4		
$\bar{X}$=12.3	S= 9.2	S= 9.3		
S= 9.2	N=32	N=27		
Other Support				
N=23	$\bar{X}$=13.6	$\bar{X}$=11.9	$\bar{X}$= 8.6	
$\bar{X}$=11.7	S=10.2	S=11.1	S= 3.1	
S= 9.4	N= 7	N=11	N= 5	
Total for entire population	N=223	$\bar{X}$=11.6	S= 9.0	

Table R

Means, Standard Deviations, and Number of Cases
for High SES with Behavior Problems

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=12.5	$\bar{X}$=10.7	$\bar{X}$=11.6
$\bar{X}$= 11.5		S= 6.4	S= 6.8	S= 6.2
S= 6.2		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$=12.2	$\bar{X}$=12.5	$\bar{X}$= 7.9	
$\bar{X}$= 11.5	S=12.3	S=12.3	S= 7.1	
S= 11.5	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$=11.7	$\bar{X}$=10.6	$\bar{X}$=13.3	
$\bar{X}$= 11.3	S= 7.6	S= 9.9	S= 9.5	
S= 9.4	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$=12.4	$\bar{X}$=16.9		
$\bar{X}$= 14.5	S= 9.9	S=11.3		
S= 10.7	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=12.9	$\bar{X}$=12.1	$\bar{X}$= 7.6	
$\bar{X}$= 11.3	S= 9.2	S= 8.4	S= 2.5	
S= 7.8	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=12.3 S=10.1

Table S

Means, Standard Deviations, and Number of Cases
for High SES with Emotional Disturbance

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=20	$\bar{X}$= 8.7	$\bar{X}$= 5.0
$\bar{X}$= 7.9		S=10.8	S=11.8	S= 3.6
S= 8.6		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$= 7.8	$\bar{X}$= 9.7	$\bar{X}$= 5.7	
$\bar{X}$= 8.3	S= 8.2	S=10.8	S= 5.4	
S= 9.2	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$=10.0	$\bar{X}$= 7.0	$\bar{X}$= 6.3	
$\bar{X}$= 7.2	S= 8.7	S= 5.5	S= 5.2	
S= 5.7	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$= 9.6	$\bar{X}$=10.6		
$\bar{X}$=10.1	S= 8.3	S= 9.0		
S= 8.6	N=32	N=27		
Other Support				
N=23	$\bar{X}$= 9.1	$\bar{X}$= 9.7	$\bar{X}$= 5.8	
$\bar{X}$= 8.7	S= 5.7	S= 7.7	S= 4.0	
S= 6.4	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=8.6 S=8.3

Table T

Means, Standard Deviations, and Number of Cases
for High SES with Learning Disabilities

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=12.5	$\bar{X}$= 8.1	$\bar{X}$= 5.8
$\bar{X}$= 7.3		S= 5.0	S= 7.8	S= 2.7
S= 5.0		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$= 7.9	$\bar{X}$= 9.7	$\bar{X}$= 8.0	
$\bar{X}$= 8.8	S= 7.3	S= 8.5	S= 7.6	
S= 7.9	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$=10.0	$\bar{X}$= 5.9	$\bar{X}$= 7.8	
$\bar{X}$= 6.7	S= 5.0	S= 4.8	S= 6.4	
S= 5.1	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$= 9.5	$\bar{X}$=10.9		
$\bar{X}$=10.1	S= 7.9	S= 9.2		
S= 8.5	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=10.3	$\bar{X}$=10.8	$\bar{X}$= 5.4	
$\bar{X}$= 9.5	S= 4.3	S= 5.6	S= 1.5	
S= 5.0	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=8.7 S=7.2

Table U

Means, Standard Deviations, and Number of Cases
for High SES with Mental Retardation

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N=30		$\bar{X}$= 3.4	$\bar{X}$= 3.7	$\bar{X}$= 2.2
$\bar{X}$= 2.7		S= 4.5	S= 3.2	S= 1.3
S= 2.4		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$= 4.5	$\bar{X}$= 3.6	$\bar{X}$= 6.9	
$\bar{X}$= 4.5	S= 4.9	S= 3.5	S=12.0	
S= 6.4	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$= 3.7	$\bar{X}$= 3.2	$\bar{X}$= 2.7	
$\bar{X}$= 3.1	S= 2.3	S= 2.5	S= 1.9	
S= 2.3	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$= 4.3	$\bar{X}$= 4.8		
$\bar{X}$= 4.5	S= 5.4	S= 6.6		
S= 6.0	N=32	N=27		
Other Support				
N=23	$\bar{X}$= 3.4	$\bar{X}$= 3.7	$\bar{X}$= 2.4	
$\bar{X}$= 3.3	S= 2.3	S= 3.7	S= 1.1	
S= 2.8	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=4.0 S=5.2

Table V

Means, Standard Deviations, and Number of Cases
for High SES with Physical Handicaps

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N=30		$\bar{X}$= 6.2	$\bar{X}$= 3.9	$\bar{X}$= 2.3
$\bar{X}$= 3.2		S= 4.3	S= 4.2	S= 2.4
S= 3.3		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$= 3.9	$\bar{X}$= 3.4	$\bar{X}$= 3.8	
$\bar{X}$= 3.7	S= 5.2	S= 3.7	S= 3.8	
S= 4.2	N=20	N=41	N=16	
Administrator				
N=28	$\bar{X}$= 3.7	$\bar{X}$= 3.0	$\bar{X}$= 2.5	
$\bar{X}$= 3.0	S= 2.3	S= 3.1	S= 2.0	
S= 2.8	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$= 4.6	$\bar{X}$= 5.5		
$\bar{X}$= 5.0	S= 4.5	S= 6.8		
S= 5.6	N=32	N=27		
Other Support				
N=23	$\bar{X}$= 4.1	$\bar{X}$= 2.9	$\bar{X}$= 2.0	
$\bar{X}$= 3.1	S= 3.2	S= 2.9	S= .7	
S= 2.7	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=3.8 S=4.3

Table W

Means, Standard Deviations, and Number of Cases
for High SES with Sensory Impairments

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 3.7	$\bar{X}$= 3.9	$\bar{X}$= 2.8
$\bar{X}$= 3.2		S= 4.2	S= 4.3	S= 2.4
S= 3.1		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$= 4.7	$\bar{X}$= 4.4	$\bar{X}$= 3.3	
$\bar{X}$= 4.3	S= 6.0	S= 4.9	S= 3.9	
S= 5.1	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 3.7	$\bar{X}$= 3.6	$\bar{X}$= 2.7	
$\bar{X}$= 3.4	S= 2.3	S= 4.7	S= 1.6	
S= 4.0	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$= 4.8	$\bar{X}$= 6.2		
$\bar{X}$= 5.5	S= 4.8	S= 7.0		
S= 5.9	N=32	N=27		
Other Support				
N= 23	$\bar{X}$= 8.6	$\bar{X}$= 5.9	$\bar{X}$= 2.2	
$\bar{X}$= 5.9	S=14.0	S= 5.6	S= 1.3	
S= 8.6	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=4.5 S=5.5

Table X

Means, Standard Deviations, and Number of Cases
for High SES with Speech and Language Difficulties

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 6.7	$\bar{X}$= 7.9	$\bar{X}$= 5.4
$\bar{X}$= 6.1		S= 3.9	S= 4.2	S= 5.2
S= 4.8		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$= 6.5	$\bar{X}$= 8.1	$\bar{X}$= 5.1	
$\bar{X}$= 7.0	S= 7.4	S= 8.6	S= 5.1	
S= 7.7	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 6.0	$\bar{X}$= 6.4	$\bar{X}$= 5.2	
$\bar{X}$= 6.1	S= 3.6	S= 4.9	S= 5.5	
S= 4.7	N= 3	N=19	N= 5	
Regular Educators				
N= 59	$\bar{X}$= 6.8	$\bar{X}$= 8.1		
$\bar{X}$= 7.4	S= 6.2	S= 8.1		
S= 7.1	N=32	N=27		
Other Support				
N= 23	$\bar{X}$= 6.4	$\bar{X}$= 6.5	$\bar{X}$= 5.2	
$\bar{X}$= 6.2	S= 4.7	S= 6.4	S= 3.4	
S= 5.2	N= 7	N=11	N= 5	

Total for entire population N=222 $\bar{X}$=6.8 S=6.6

Table Y

Means, Standard Deviations, and Number of Cases
for Boys with Academic Difficulties

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=13.7	$\bar{X}$=17.3	$\bar{X}$=18.2
$\bar{X}$= 17.4		S= 4.8	S= 6.1	S= 9.9
S= 8.5		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$=24.8	$\bar{X}$=19.9	$\bar{X}$=14.7	
$\bar{X}$= 20.4	S=22.4	S=13.2	S=10.7	
S= 16.5	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$=13.0	$\bar{X}$=20.0	$\bar{X}$=16.2	
$\bar{X}$= 18.5	S= 6.1	S=22.0	S= 8.8	
S= 18.6	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$=19.4	$\bar{X}$=19.1		
$\bar{X}$= 19.3	S=14.8	S=12.6		
S= 13.7	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=16.4	$\bar{X}$=22.4	$\bar{X}$=14.8	
$\bar{X}$= 19.0	S= 6.9	S=15.2	S= 9.5	
S= 12.1	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=19.3 S=14.7

Table Z

Means, Standard Deviations, and Number of Cases
for Boys with Behavior Problems

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=21.2	$\bar{X}$=13.7	$\bar{X}$=16.2
$\bar{X}$= 16.3		S= 8.5	S= 7.8	S= 7.3
S= 7.7		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$=22.8	$\bar{X}$=18.1	$\bar{X}$= 8.2	
$\bar{X}$= 17.7	S=22.8	S=17.8	S= 9.9	
S= 18.9	N=26	N=41	N=16	
Administrator				
N= 27	$\bar{X}$=11.7	$\bar{X}$=16.1	$\bar{X}$=12.3	
$\bar{X}$= 14.7	S= 5.8	S=20.0	S= 5.6	
S= 16.6	N= 3	N=18	N= 6	
Regular Educators				
N= 59	$\bar{X}$=22.2	$\bar{X}$=20.6		
$\bar{X}$= 21.4	S=18.8	S=17.7		
S= 18.2	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=15.3	$\bar{X}$=20.9	$\bar{X}$=10.6	
$\bar{X}$= 17.0	S= 9.5	S=20.1	S= 5.9	
S= 15.2	N= 7	N=11	N= 5	

Total for entire population N=222 $\bar{X}$=18.1 S=17.0

Table AA

Means, Standard Deviations, and Number of Cases for Boys with Emotional Disturbance

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 9.5	$\bar{X}$= 4.9	$\bar{X}$= 5.1
$\bar{X}$= 5.6		S= 4.2	S= 2.9	S= 3.6
S= 3.7		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$=13.3	$\bar{X}$= 8.6	$\bar{X}$= 6.2	
$\bar{X}$= 9.6	S=17.5	S=10.2	S= 8.9	
S=12.9	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$= 5.7	$\bar{X}$=11.8	$\bar{X}$= 5.7	
$\bar{X}$= 9.9	S= 4.0	S=20.0	S= 2.2	
S=16.6	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$= 9.6	$\bar{X}$=10.9		
$\bar{X}$=10.2	S= 8.5	S= 9.2		
S= 8.8	N=32	N=27		
Other Support				
N=23	$\bar{X}$= 7.0	$\bar{X}$=12.1	$\bar{X}$= 5.8	
$\bar{X}$= 9.2	S= 4.9	S=14.0	S= 3.2	
S=10.3	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=9.2 S=11.4

Table BB

Means, Standard Deviations, and Number of Cases
for Boys with Learning Disabilities

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=11.2	$\bar{X}$=12.3	$\bar{X}$= 8.1
$\bar{X}$= 9.5		S= 4.8	S= 8.8	S= 4.0
S= 5.6		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$=20.5	$\bar{X}$=12.1	$\bar{X}$=10.4	
$\bar{X}$= 14.4	S=21.7	S= 9.0	S= 9.5	
S= 14.7	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 7.0	$\bar{X}$=13.5	$\bar{X}$= 6.5	
$\bar{X}$= 11.3	S= 3.5	S=19.1	S= 2.1	
S= 16.0	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$=16.0	$\bar{X}$=13.3		
$\bar{X}$= 14.7	S=15.4	S=10.5		
S= 13.4	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=14.6	$\bar{X}$=16.8	$\bar{X}$=11.2	
$\bar{X}$= 14.9	S=11.3	S=16.0	S= 5.2	
S= 12.7	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=13.5 S=13.5

Table CC

Means, Standard Deviations, and Number of Cases
for Boys with Mental Retardation

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 3.0	$\bar{X}$= 8.4	$\bar{X}$= 3.0
$\bar{X}$= 4.2		S= 2.3	S= 9.9	S= 2.3
S= 5.4		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$=11.8	$\bar{X}$= 4.6	$\bar{X}$= 3.9	
$\bar{X}$= 6.7	S=19.0	S= 4.9	S= 3.7	
S=11.7	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 2.0	$\bar{X}$= 6.9	$\bar{X}$= 3.3	
$\bar{X}$= 5.6	S= 1.0	S=15.6	S= 1.9	
S=12.9	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$= 3.8	$\bar{X}$= 3.7		
$\bar{X}$= 3.8	S= 4.7	S= 3.2		
S= 4.2	N=32	N=27		
Other Support				
N= 23	$\bar{X}$= 5.6	$\bar{X}$= 7.7	$\bar{X}$= 2.4	
$\bar{X}$= 5.9	S= 3.4	S=14.3	S= .90	
S=10.1	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=5.4 S=9.5

Table DD

Means, Standard Deviations, and Number of Cases
for Boys with Physical Handicaps

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 3.5	$\bar{X}$= 3.4	$\bar{X}$= 2.0
$\bar{X}$= 2.5		S= 2.4	S= 3.3	S= 1.5
S= 2.2		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$= 5.7	$\bar{X}$= 3.5	$\bar{X}$= 3.4	
$\bar{X}$= 4.2	S= 7.8	S= 3.7	S= 3.8	
S= 5.4	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$= 2.0	$\bar{X}$= 4.8	$\bar{X}$= 1.7	
$\bar{X}$= 3.8	S= 1.0	S=11.2	S= .8	
S= 9.3	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$= 5.3	$\bar{X}$= 4.1		
$\bar{X}$= 4.7	S= 9.3	S= 3.3		
S= 7.2	N=32	N=27		
Other Support				
N= 23	$\bar{X}$= 6.0	$\bar{X}$= 7.1	$\bar{X}$= 2.2	
$\bar{X}$= 5.7	S= 6.4	S=14.5	S=18	
S=10.5	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=4.2 S=6.8

Table EE

Means, Standard Deviations, and Number of Cases
for Boys with Sensory Impairments

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N=30		$\bar{X}$= 3.2	$\bar{X}$= 4.8	$\bar{X}$= 3.3
$\bar{X}$= 3.7		S= 2.1	S= 5.5	S= 3.7
S= 3.9		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$= 6.5	$\bar{X}$= 4.4	$\bar{X}$= 3.9	
$\bar{X}$= 5.0	S= 7.7	S= 4.5	S= 5.5	
S= 5.9	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$= 2.7	$\bar{X}$= 5.1	$\bar{X}$= 2.2	
$\bar{X}$= 4.2	S= 2.1	S=11.4	S= .4	
S= 9.4	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$= 5.4	$\bar{X}$= 4.8		
$\bar{X}$= 5.1	S= 6.2	S= 3.9		
S= 5.3	N=32	N=27		
Other Support				
N=23	$\bar{X}$= 7.1	$\bar{X}$=10.4	$\bar{X}$= 2.2	
$\bar{X}$= 7.6	S=10.2	S=14.1	S= 1.3	
S=11.4	N= 7	N=11	N= 5	
Total for entire population	N=223	$\bar{X}$=5.0	S=6.8	

Table FF

Means, Standard Deviations, and Number of Cases for Boys with Speech and Language Difficulties

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 8.7	$\bar{X}$= 8.1	$\bar{X}$= 7.1
$\bar{X}$= 7.6		S= 2.5	S= 5.2	S= 6.0
S= 5.4		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$=13.1	$\bar{X}$= 8.6	$\bar{X}$= 7.6	
$\bar{X}$= 9.8	S=13.9	S= 8.1	S= 8.0	
S=10.4	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$= 7.0	$\bar{X}$=11.8	$\bar{X}$=17.5	
$\bar{X}$=12.5	S= 7.2	S=17.6	S=30.7	
S=14.9	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$= 8.4	$\bar{X}$=12.4		
$\bar{X}$=10.6	S= 9.4	S=13.4		
S=11.5	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=10.9	$\bar{X}$=13.6	$\bar{X}$= 6.8	
$\bar{X}$=11.3	S= 9.8	S=20.0	S= 2.4	
S=14.7	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=10.1 S=12.2

Table GG

Means, Standard Deviations, and Number of Cases
for Girls with Academic Problems

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=13.7	$\bar{X}$=11.9	$\bar{X}$=11.0
$\bar{X}$= 11.6		S= 7.5	S= 6.5	S= 4.3
S= 5.2		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$=12.1	$\bar{X}$=10.7	$\bar{X}$= 7.4	
$\bar{X}$= 10.5	S= 9.9	S= 7.6	S= 5.1	
S= 8.1	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$= 7.3	$\bar{X}$= 9.7	$\bar{X}$= 6.8	
$\bar{X}$= 8.8	S= 3.8	S= 6.2	S= 6.5	
S= 6.0	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$=12.4	$\bar{X}$=12.8		
$\bar{X}$= 12.6	S=10.5	S= 8.3		
S= 9.5	N=32	N=27		
Other Support				
N=23	$\bar{X}$=14.4	$\bar{X}$=14.6	$\bar{X}$= 6.0	
$\bar{X}$= 12.7	S= 9.5	S=10.6	S= 3.8	
S= 9.3	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=11.2 S=8.1

Table HH

Means, Standard Deviations, and Number of Cases
for Girls with Behavior Problems

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=15.7	$\bar{X}$= 6.3	$\bar{X}$= 9.3
$\bar{X}$= 9.4		S=11.8	S= 2.8	S= 5.6
S= 6.6		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$= 8.5	$\bar{X}$= 9.6	$\bar{X}$= 5.6	
$\bar{X}$= 8.5	S=10.5	S=12.5	S= 7.1	
S=11.0	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$= 5.3	$\bar{X}$= 6.8	$\bar{X}$= 4.7	
$\bar{X}$= 6.2	S= 3.5	S= 7.4	S= 3.1	
S= 6.3	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$= 9.7	$\bar{X}$=10.5		
$\bar{X}$=10.1	S= 9.0	S= 8.4		
S= 8.7	N=32	N=27		
Other Support				
N= 23	$\bar{X}$=11.6	$\bar{X}$=11.9	$\bar{X}$= 4.8	
$\bar{X}$=10.2	S=10.0	S=11.0	S= 2.5	
S= 9.6	N= 7	N=11	N= 5	
Total for entire population	N=223	$\bar{X}$=8.9	S=9.3	

Table II

Means, Standard Deviations, and Number of Cases
for Girls with Emotional Disturbance

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=15.0	$\bar{X}$= 5.7	$\bar{X}$= 4.8
$\bar{X}$= 6.4		S=13.5	S= 6.8	S= 3.9
S= 7.0		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$= 8.6	$\bar{X}$= 7.2	$\bar{X}$= 4.7	
$\bar{X}$= 7.2	S=10.9	S= 7.7	S= 5.0	
S= 8.5	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 5.0	$\bar{X}$= 5.7	$\bar{X}$= 3.7	
$\bar{X}$= 5.2	X= 4.4	S= 5.9	S= 3.1	
S= 5.2	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$= 6.1	$\bar{X}$= 8.7		
$\bar{X}$= 7.7	S= 7.0	S= 8.1		
S= 7.5	N=32	N=27		
Other Support				
N= 23	$\bar{X}$= 8.6	$\bar{X}$= 9.9	$\bar{X}$= 3.2	
$\bar{X}$= 8.0	S= 9.7	S=10.8	S= 1.6	
S= 9.3	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=7.1 S=7.8

Table JJ

Means, Standard Deviations, and Number of Cases
for Girls with Learning Disabilities

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$=10.7	$\bar{X}$= 4.3	$\bar{X}$= 5.4
$\bar{X}$= 5.9		S= 3.0	S= 2.8	S= 2.8
S= 3.4		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$= 9.9	$\bar{X}$= 6.3	$\bar{X}$= 4.9	
$\bar{X}$= 7.2	S=10.8	S= 6.5	S= 4.8	
S= 8.0	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 5.0	$\bar{X}$= 4.4	$\bar{X}$= 2.7	
$\bar{X}$= 4.1	S= 3.0	S= 2.5	S= 1.2	
S= 2.4	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$= 9.1	$\bar{X}$= 8.8		
$\bar{X}$= 9.0	S= 8.7	S= 7.3		
S= 8.0	N=32	N=27		
Other Support				
N= 23	$\bar{X}$= 9.7	$\bar{X}$= 8.3	$\bar{X}$= 2.6	
$\bar{X}$= 7.5	S= 7.7	S=10.9	S= 1.7	
S= 8.9	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$= 7.1 S= 7.3

Table KK

Means, Standard Deviations, and Number of Cases
for Girls with Mental Retardation

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 2.2	$\bar{X}$= 3.6	$\bar{X}$= 2.6
$\bar{X}$= 4.2		S= 1.9	S= 3.4	S= 1.5
S= 6.6		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$= 6.4	$\bar{X}$= 3.4	$\bar{X}$= 3.4	
$\bar{X}$= 4.5	S= 8.1	S= 3.7	S= 2.5	
S= 5.5	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$= 2.0	$\bar{X}$= 5.1	$\bar{X}$= 2.3	
$\bar{X}$= 4.2	S= 1.0	S=11.0	S= 1.5	
S= 9.1	N= 3	N=19	N= 6	
Regular Educators				
N=59	$\bar{X}$= 3.6	$\bar{X}$= 5.8		
$\bar{X}$= 4.3	S= 4.5	S= 8.3		
S= 6.5	N=32	N=27		
Other Support				
N=23	$\bar{X}$= 4.1	$\bar{X}$= 7.0	$\bar{X}$= 2.0	
$\bar{X}$= 5.0	S= 3.2	S=14.4	S= 1.0	
S=10.1	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=4.2 S=6.6

Table LL

Means, Standard Deviations, and Number of Cases for Girls with Physical Handicaps

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N=30		$\bar{X}$= 3.2	$\bar{X}$= 3.2	$\bar{X}$= 1.9
$\bar{X}$= 2.4		S= 2.1	S= 3.4	S= 1.5
S= 2.1		N= 4	N= 7	N=19
Special Educators				
N=83	$\bar{X}$= 5.1	$\bar{X}$= 3.7	$\bar{X}$= 3.4	
$\bar{X}$= 4.1	S= 8.3	S= 3.8	S= 3.8	
S= 5.6	N=26	N=41	N=16	
Administrator				
N=28	$\bar{X}$= 2.0	$\bar{X}$= 5.1	$\bar{X}$= 1.7	
$\bar{X}$= 4.0	S= 1.0	S=11.4	S= 1.2	
S= 9.4	N= 3	N=19	N=6	
Regular Educators				
N=59	$\bar{X}$= 4.1	$\bar{X}$= 4.8		
$\bar{X}$= 4.4	S= 5.6	S= 6.6		
S= 6.1	N=32	N=27		
Other Support				
N=23	$\bar{X}$= 2.7	$\bar{X}$= 6.8	$\bar{X}$= 2.2	
$\bar{X}$= 4.6	S= 2.2	S=14.4	S= .8	
S=10.1	N= 7	N=11	N= 5	
Total for entire population	N=223	$\bar{X}$=4.0	S=6.6	

Table MM

Means, Standard Deviations, and Number of Cases
for Girls with Sensory Deficits

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 2.5	$\bar{X}$= 5.7	$\bar{X}$= 2.4
$\bar{X}$= 3.2		S= 1.7	S= 7.2	S= 1.6
S= 3.8		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$= 5.8	$\bar{X}$= 3.6	$\bar{X}$= 3.6	
$\bar{X}$= 4.3	S= 7.8	S= 4.0	S= 4.9	
S= 5.6	N=26	N=41	N=16	
Administrator				
N= 28	$\bar{X}$= 2.0	$\bar{X}$= 5.6	$\bar{X}$= 1.8	
$\bar{X}$= 4.4	S= 1.0	S=11.6	S= .7	
S= 9.6	N= 3	N=19	N= 6	
Regular Educators				
N= 59	$\bar{X}$= 4.7	$\bar{X}$= 5.5		
$\bar{X}$= 5.1	S= 5.1	S= 7.0		
S= 6.0	N=32	N=27		
Other Support				
N= 23	$\bar{X}$= 7.0	$\bar{X}$=10.2	$\bar{X}$= 1.8	
$\bar{X}$= 7.4	S=10.3	S=13.7	S= 1.3	
S=11.2	N= 7	N=11	N= 5	

Total for entire population N=223 $\bar{X}$=4.7 S=6.9

Table NN

Means, Standard Deviations, and Number of Cases
for Girls with Speech and Language Difficulties

Roles	Very Low (Pre 6-10)	Low (Pre 11-15)	High (Pre 16-20)	Very High (Pre 21-25)
School Psychologist				
N= 30		$\bar{X}$= 5.5	$\bar{X}$= 6.7	$\bar{X}$= 4.9
$\bar{X}$= 5.4		S= 4.1	S= 3.2	S= 3.8
S= 3.7		N= 4	N= 7	N=19
Special Educators				
N= 83	$\bar{X}$= 9.2	$\bar{X}$= 6.0	$\bar{X}$= 5.6	
$\bar{X}$= 6.9	S=11.4	S= 5.9	S= 5.0	
S= 8.0	N=26	N=41	N=16	
Administrator				
N= 27	$\bar{X}$= 3.7	$\bar{X}$= 5.9	$\bar{X}$= 4.2	
$\bar{X}$= 5.3	S= 1.1	S= 5.4	S= 3.4	
S= 4.8	N= 3	N=19	N= 5	
Regular Educators				
N= 59	$\bar{X}$= 6.0	$\bar{X}$= 7.3		
$\bar{X}$= 6.6	S= 6.0	S= 5.1		
S= 5.6	N=32	N=27		
Other Support				
N= 23	$\bar{X}$= 6.9	$\bar{X}$= 9.6	$\bar{X}$= 4.4	
$\bar{X}$= 7.6	S= 5.6	S=11.8	S= 3.6	
S= 8.9	N= 7	N=11	N= 5	

Total for entire population N=222 $\bar{X}$=6.5 S=6.7

APPENDIX E

Individual Case Studies

Appendix E-1

Referral Information for 16 Conditions 1e

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Name: William Simcase

Address: 01 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Vice President, Barnette Bank

Mother: Alice, age 33, Realtor

Siblings: William is the second of four children.

Medical Information: No history of medical problems; most recent physical examination normal.

Reason for Referral: William's teacher reported the following behaviors on a referral checklist:

1. fails to complete academic assignments in class
2. learns slowly
3. spells poorly
4. reads poorly
5. makes failing grades in arithmetic
6. fails to complete homework

photo
here

Name: William Simcase

Address: 02 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Vice President, Barnette Bank

Mother: Alice, age 33, Realtor

Siblings: William is the second of four children

Medical Information: No history of medical problem; most recent physical examination normal

Reason for Referral: William's teacher reported the following behaviors on a referral checklist:

1. fails to complete academic assignments in class
2. learns slowly
3. spells poorly
4. reads poorly
5. makes failing grades in arithmetic
6. fails to complete homework.

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Name: William Simcase

Address: 03 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Vice President Barnette Bank

Mother: Alice, age 33, Realtor

Siblings: William is the second of four children

Medical Information: No history of medical problems; most recent physical examination normal

Reason for Referral: William's teacher reported the following behaviors on a referral checklist:

1. belittles other children
2. talks back to adults
3. demonstrates temper tantrums
4. repeatedly fights with others
5. criticizes and nags others
6. annoys other children

4e

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Name: William Simcase

Address: 04 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Vice President, Barnette Bank

Mother: Alice, age 33, Realtor

Siblings: William is the second of four children

Medical Information: No history of medical problems; most recent physical examination normal.

Reason for Referral: William's teacher reported the following behaviors on a referral checklist:

1. belittles other children
2. talks back to adults
3. demonstrates temper tantrums
4. repeatedly fights with others
5. criticizes and nags others
6. annoys other children

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here

Name: William Simcase

Address: 05 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Custodian, Barnette Bank

Mother: Alice, age 33, Supermarket Checkout Cashier

Siblings: William is the second of four children

Medical Information: No history of medical problems; most recent physical examination normal.

Reason for Referral: William's teacher reported the following behaviors on a referral checklist:

1. fails to complete academic assignments in class
2. learns slowly
3. spells poorly
4. reads poorly
5. makes failing grades in arithmetic
6. fails to complete homework

6e

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Name: William Simcase

Address: 06 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Custodian, Barnette Bank

Mother: Alice, age 33, Supermarket Checkout Cashier

Siblings: William is the second of four children

Medical Information: No history of medical problems; most recent physical examination normal.

Reason for Referral: William's teacher reported the following behaviors on a referral checklist:

1. fails to complete academic assignments in class
2. learns slowly
3. spells poorly
4. reads poorly
5. makes failing grades in arithmetic
6. fails to complete homework

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Name: William Simcase

Address: 07 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Custodian, Barnette Bank

Mother: Alice, age 33, Supermarket Checkout Cashier

Siblings: William is the second of four children

Medical Information: No history of medical problems; most recent physical examination normal.

Reason for Referral: William's teacher reported the following behaviors on a referral checklist:

1. belittles other children
2. talks back to adults
3. demonstrates temper tantrums
4. repeatedly fights with others
5. criticizes and nags others
6. annoys other children

8e

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Name: William Simcase

Address: 08 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Custodian, Barnette Bank

Mother: Alice, age 33, Supermarket Checkout Cashier

Siblings: William is the second of four children.

Medical Information: No history of medical problems; most recent physical examination normal.

Reason for Referral: William's teacher erported the following behaviors on a referral checklist:

1. belittles other children
2. talks back to adults
3. demonstrates temper tantrums
4. repeatedly fights with others
5. criticizes and nags others
6. annoys other children.

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Name: Phyllis Simcase

Address: 09 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Vice President, Barnette Bank

Mother: Alice, age 33, Realtor

Siblings: Phyllis is the second of four children

Medical Information: No history of medical problems; most recent physical examination normal

Reason for Referral: Phyllis' teacher reported the following behaviors on a referral checklist:

1. fails to complete academic assignments in class
2. learns slowly
3. spells poorly
4. reads poorly
5. makes failing grades in arithmetic
6. fails to complete homework

10e

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Name: Phyllis Simcase

Address: 10 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Vice President, Barnette Bank

Mother: Alice, age 33, Realtor

Siblings: Phyllis is the second of four children

Medical Information: No history of medical problems; most recent physical examination normal

Reason for Referral: Phyllis' teacher reported the following behaviors on a referral checklist:

1. fails to complete academic assignments in class
2. learns slowly
3. speels poorly
4. reads poorly
5. makes failing grades in arithmetic
6. fails to complete homework

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Name: Phyllis Simcase

Address: 11 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Vice President, Barnette Bank

Mother: Alice, age 33, Realtor

Siblings: Phyllis is the second of four children

Medical Information: No history of medical problems; most recent physical examination normal.

Reason for Referral: Phyllis' teacher reported the following behaviors on a referral checklist:

1. belittles other children
2. talks back to adults
3. demonstrates temper tantrums
4. repeatedly fights with others
5. criticizes and nags others
6. annoys other children

12e

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Name: Phyllis Simcase

Address: 12 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Vice President, Barnette Bank

Mother: Alice, age 33, Realtor

Siblings: Phyllis is the second of four children

Medical Information: No history of medical problems; most recent physical examination normal.

Reason for Referral: Phyllis' teacher reported the following behaviors on a referral checklist:

1. belittles other children
2. talks back to adults
3. demonstrates temper tantrums
4. repeatedly fights with others
5. criticizes and nags others
6. annoys other children

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Name: Phyllis Simcase

Address: 13 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Custodian Barnette Bank

Mother: Alice, age 33, Supermarket Checkout Cashier

Siblings: Phyllis is the second of four children

Medical Information: No history of medical problems; most recent physical examination normal.

Reason for Referral: Phyllis' teacher erported the following behaviors on a referral checklist:

1. fails to complete academic assignments in class
2. learns slowly
3. spells poorly
4. reads poorly
5. makes failing grades in arithmetic
6. fails to complete homework

14e

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Name: Phyllis Simcase

Address: 14 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Custodian, Barnette Bank

Mother: Alice, age 33, Supermarket Checkout Cashier

Siblings: Phyllis is the second of four children.

Medical Information: No history of medical problems; most recent physical examination normal.

Reason for Referral: Phyllis' teacher reported the following behaviors on a referral checklist:

1. fails to complete academic assignments in class
2. learns slowly
3. spells poorly
4. reads poorly
5. makes failing grades in arithmetic
6. fails to complete homework

photo
here

Name: Phyllis Simcase

Address: 15 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Facher: Henry, age 35, Custodian, Barnette Bank

Mother: Alice, age 33, Supermarket Checkout Cashier

Siblings: Phyllis is the second of four children

Medical Information: No history of medical problems; most recent behaviors on a referral checklist:

1. belittles other children
2. talks back to adults
3. demonstrates temper tantrums
4. repeatedly fights with others
5. criticizes and nags others
6. annoys other children

16e

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here

Name: Phyllis Simcase

Address: 16 State Street

Birthdate: 10/14/68 Chronological Age: 10-4

School: Jackson Elementary

Grade: 5

Father: Henry, age 35, Custodian, Barnette Bank

Mother: Alice, age 33, Supermarket Checkout Cashier

Siblings: Phyllis is the second of four children

Medical Information: No history of medical problems; most recent physical examination normal.

Reason for Referral: Phyllis' teacher reported the following behaviors on a referral checklist:

1. belittles other children
2. talks back to adults
3. demonstrates temper tantrums
4. repeatedly fights with others
5. criticizes and nags others
6. annoys other children

Appendix E-2

Mean Expectancies for Percentage of Individuals with Handicapping Conditions by Role

		MINORITY			LOW SES			HIGH SES			BOY			GIRL		
		School Psychologists	Special Educators	Regular Educators	School Psychologists	Special Educators	Regular Educators	School Psychologists	Special Educators	Regular Educators	School Psychologists	Special Educators	Regular Educators	School Psychologists	Special Educators	Regular Educators
Academic Difficulties	$\bar{X}$	28.3	2.48	32.7	27.2	23.6	32.5	11.6	10.8	13.1	17.3	19.0	19.3	11.8	9.5	13.1
	SD	15.9	18.8	25.3	9.9	15.3	24.1	6.3	10.0	9.6	5.2	17.1	14.4	4.7	7.7	9.9
Behavior Problems	$\bar{X}$	16.8	20.3	25.9	19.3	19.3	28.0	11.7	10.8	15.3	15.4	13.4	21.3	8.7	7.3	10.9
	SD	12.1	18.7	22.3	10.2	16.2	24.5	5.6	12.2	10.9	6.6	14.2	18.9	5.3	7.9	9.0
Emotional Disturbance	$\bar{X}$	9.0	13.2	16.4	9.4	11.3	19.0	8.0	8.2	10.4	5.6	8.9	9.6	5.8	6.5	7.8
	SD	10.8	18.4	17.2	10.0	13.2	19.2	8.6	10.4	8.6	3.2	12.7	9.0	4.7	7.5	7.3
Learning Disabilities	$\bar{X}$	13.0	16.1	21.6	14.7	12.2	20.4	7.7	8.3	10.6	10.2	12.8	14.0	6.0	6.8	9.2
	SD	9.4	16.1	19.1	10.3	11.9	19.8	5.2	8.2	8.9	5.8	13.2	13.8	3.3	8.9	8.3
Mental Retardation	$\bar{X}$	6.3	6.7	7.4	6.1	9.0	7.0	3.0	4.1	5.3	4.8	7.3	4.0	3.0	4.6	5.0
	SD	7.4	10.4	11.3	5.8	14.8	7.9	2.5	4.5	6.5	5.9	13.3	4.0	2.1	5.9	7.2
Physical Handicaps	$\bar{X}$	3.0	6.5	6.5	3.9	5.7	6.0	3.6	4.1	5.6	2.8	4.4	5.0	2.4	4.3	5.2
	SD	2.7	9.3	8.3	5.2	8.5	7.9	3.5	5.0	6.0	2.3	6.0	7.7	2.2	6.2	6.6
Sensory Impairments	$\bar{X}$	4.5	7.2	7.7	4.7	6.1	9.1	3.6	4.7	6.1	3.6	5.4	5.4	3.5	4.6	5.9
	SD	5.7	11.4	8.1	5.6	8.9	11.4	3.2	5.9	6.2	3.5	6.1	5.5	4.2	5.9	6.4
Speech and Language Difficulties	$\bar{X}$	12.6	17.6	18.9	10.6	15.5	19.9	6.0	7.0	8.2	6.9	9.5	10.5	5.2	6.4	6.7
	SD	15.0	19.7	18.4	9.8	17.8	21.9	4.1	7.9	7.5	4.4	10.8	11.8	3.2	6.9	5.5

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University of Minnesota

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